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ORIGINAL ARTICLES

THE NEWER METHODS OF INTRAVENOUS THERAPY IN SEPTICAEMIAS OF OTITIC ORIGIN

(A Preliminary Report)

BY CHARLES TERRELL PORTER, BOSTON

READING in the *Johns Hopkins Journal* of nineteen twenty-four, of the Intravenous use of Mercurochrome Sol. 220 in a case of localized abscess (Peri-Nephritic), I was struck with the possibilities of such treatment in the field of Otology. Particularly in cases of general septicæmia following thrombosis of the lateral sinus.

It would seem that the Otologists had an advantage over the general surgeon in treating septicæmia by being able to eliminate the original source of infection by ligation of the jugular. Moreover it occurred to me that here was a valuable agent in treating the generally septic cases where there is no evidence of a definite Sinus Thrombosis, as in case Number Two.

Since coming to this decision, I have had the opportunity to put it to test in a number of cases and have been most gratified with the results.

The full dosage in man is about five mg. per kilo of body weight. In cases with an unusually large number of organisms free in the circulation, I have preferred to give a smaller dose (about three mg. per kilo of body weight). I have made the reduction in dosage because I am convinced that the reaction, so much dreaded by those using the drug, is caused not by the Mercurochrome, but by the liberation of the toxins from the killed bacteria in the circulation. I have repeated the dose and increased or decreased the amount according to the initial reactions which show wide variations.

That there is some danger in the use of Mercurochrome intravenously is unquestionably true. Especially in cases where there is kidney involvement. There have been reported some cases where an acute Nephritis has occurred when no previous kidney lesion existed. It is unwise to repeat the injection until this has quieted down. There are on record a few fatalities from complete suppression of urine following a severe reaction. In only one instance have I noted any kidney involvement, a slight trace of albumin, which quickly disappeared.

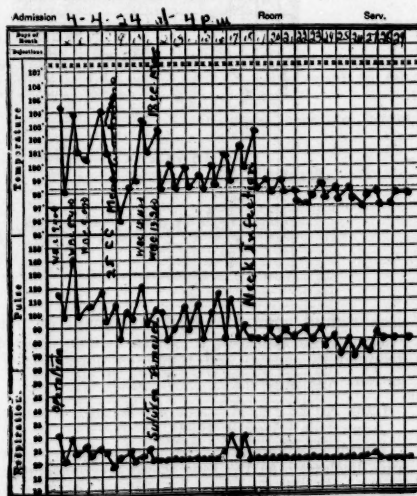
The following are reports of three cases in

which Mercurochrome was used with apparent beneficial results.

CASE No 1: Male. White. Age 25. April 4, 1924: Admitted to Hospital.

Diagnosis: Lomsa. with Mastoiditis. Peri-sinus abscess. † Thrombosis.

History: March 7, 1924, sore throat with



pain in left ear, in bed two days. Drum ruptured and discharged.

March 10, 1924: Patient allowed to return to work. Ear still discharging. Worked one week. Then had to quit and go to bed. Seen by local doctor and throat man.

March 30, 1924: Again complained of pain in left ear. Following day had chill, and had chill and temperature 105 F. daily, until admitted to hospital.

April 4, 24: Operation: Left simple Mastoid. Peri-sinus abscess found, sinus wall thick-

ened, thrombosed. Condition very poor. Jugular vein not tied at this time for that reason.

April 5, 1924: Left jugular ligated, vein opened in Mastoid, pus in vein. Culture *Pneumococcus*.

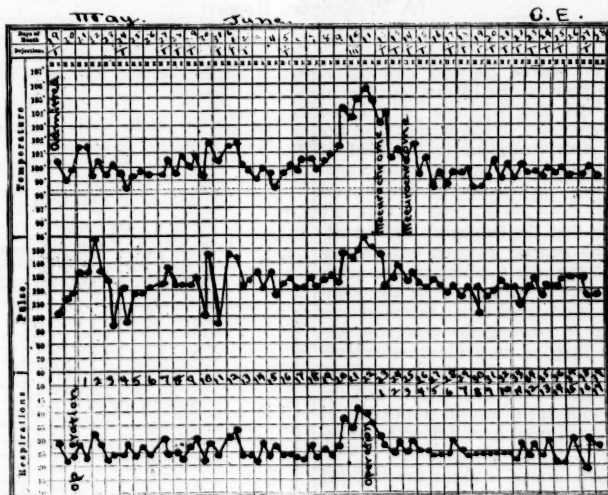
April 8, 1924: Temperature still swinging 100-104. Mereurochrome 20 cc., intravenously. Sharp reaction. Chill, temperature 105 F. Violent diarrhea—20 stools in 24 hours, tinged red. Urine also tinged. Temperature down two days. Up on third day.

April 11, 1924: Mereurochrome 18 cc. given, with fall in temperature. Temperature 98-100 for six days, then rose to 101-102. Then

June 11, 1924: **Operation:** Left simple Mastoidectomy. Mastoid broken down and filled with pus and granulations. Sinus and Dura not exposed.

June 12, 1924: Temperature still remains up. Patient has several infected hang-nails and seems generally septic. Mereurochrome 1%, 5cc. in Median Cephalic vein, right arm. Slight rise in temperature, no chill. Temperature dropped then from 103-104, to 100-101 F., where it remained for two days.

June 14, 1924: Above dose repeated. Temperature dropped to normal and remained so. June 15, 1924: Temperature down. Right



neck wound opened and small amount of pus evacuated, following which temperature dropped to normal and remained normal until patient was discharged, well, April 29, 1924.

CASE NO 2: C. E. Age 4. White. Female. Admitted: May 9, 1924.

History: Tonsillitis five weeks ago. Pain and discharge A. D., four weeks—(spontaneous rupture). Temperature for four days with swelling behind A. D.

May 20, 1924: **Operation:** Right simple Mastoidectomy. Sinus exposed, large Perisinus Abscess with granulations on Sinus and adjacent Dura.

May 25, 1924: Post aural wick removed. Middle ear still discharging.

June 4, 1924: Still discharge from middle ear. Mereurochrome 4% used locally.

June 9, 1924: **Operation:** Adenoidectomy and Paracentesis for left Otitis Media Sup. Ac.

June 10, 1924: Child delirious. Physical examination negative, except for systolic murmur at apex and axilla.

Mastoid wound closing up. Right middle ear almost dry. The left shows very little tendency to heal. Temperature still down.

June 23, 1924: Right Mastoid and middle ear almost healed. Left is beginning to heal in. Temperature still down.

June 28, 1924: Discharged to Out Patient Department against advice. Right middle ear dry. Wound clean and healing. Left ear still has slight discharge from middle ear. Post wound healing. Temperature normal.

CASE No. 3: H. H. Age 9. White. Female. May 14, 1924: Admitted to Massachusetts Eye and Ear Infirmary.

Diagnosis: Left, Post Aural Abscess, seven days. Right Otitis Media Sup. Ac., seven days.

History: Both ears discharged two and a half years ago. Two weeks ago patient had severe cold and sore throat with earache left side.

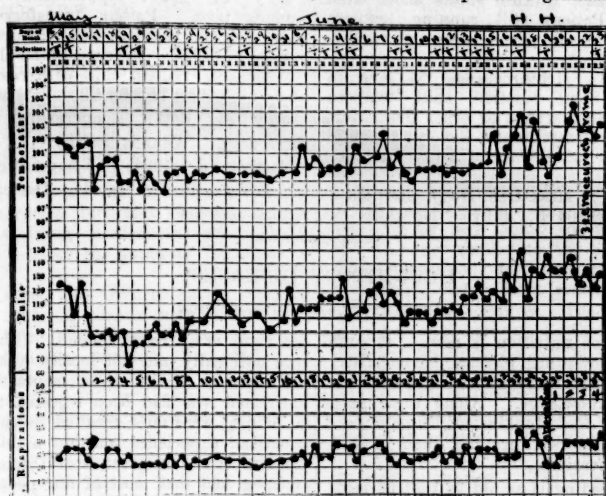
May 15, 1924: **Operation:** Left simple Mastoid. Sinus exposed and appeared normal.

May 25, 1924: Middle ear dry.

June 1, 1924: Patient running temperature.

Heart and lungs negative, general condition poor. Left middle ear dry. Right ear still discharging.

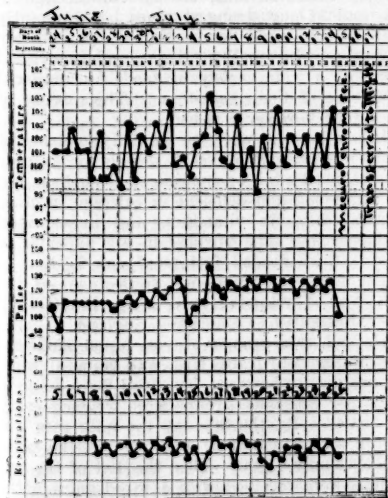
June 22, 1924: Mercurochrome 1%, 3 cc., intravenously. Slight rise in temperature, no diarrhea. Temperature gradually came down



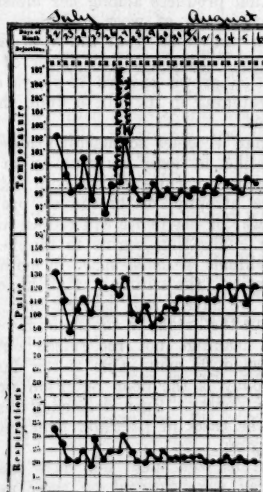
June 19, 1924: Operation: Right simple Mastoid. Sinus and Dura not exposed. Tonsillectomy and Adenoidectomy, La Force. Left Mastoid wound cleaned out and edges sutured.

to normal on June 26th. Transferred to Observation Ward. ? Erysipelas.

July 2, 1924: Transferred back to house, running septic temperature.



June 21, 1924: Physical examination: Heart and lungs clear. P. E. negative except for Hyperaemia around right eye ? of Erysipelas.



July 5, 1924: Still running septic temperature. W. C. 16,200. Unable to get blood culture.

July 10, 1924: Blood culture taken. *W. C.* 16,200.

July 13, 1924: Culture shows short chain *Streptococci*. Patient still running temperature. *W. C.* 18,200. Tenderness and swelling of right knee.

July 15, 1924: Mercurochrome 1%, 5 cc., intravenously. Some reaction, chill, temperature 104 F. No diarrhea or other discomfort. Transferred to Massachusetts General Hospital, Surgical Service, on account of Septic Arthritis, Right Knee.

July 18, 1924: Mass. Gen. Hosp. chart shows temperature 100-104 F., daily. No chills but

chilly sensations. Knee aspirated. No organisms found.

July 24, 1924: Appearance of Mastoid wounds poor. Patient transferred back to Mass. Eye and Ear Inf. Temperature 100-103 F.

July 27, 1924: Mercurochrome 1%, 5cc., intravenously. Slight chill with rise of temperature to 102 F., rapidly falling to normal.

July 31, 1924: Temperature normal for three days. Wounds healthy.

August 6, 1924: Temperature normal. Wounds practically healed. Discharged home. Middle ears dry.

DEFICIENCY DISEASES*

BY PRESENTIUS VAN NUYS, WESTON

THE science of nutrition is new. It could not begin to grow until physics, bio-chemistry, and physiology had thrown their light onto hidden paths of knowledge. Along these paths came explorers, like Hopkins of England, and McCollom of America, groping their way to surprising discoveries.

The art of feeding is as old as that of medicine. The science of feeding began within our own generation. The axiom that necessity is the mother of invention is verified in that the world today needs a knowledge of nutrition as never before in her history.

Civilization produces among her blessings an equally large crop of woes. Indeed it may seem, to an individual, that the woes outweigh the blessings. Like a child's tower of blocks, as civilization grows upward it sways dangerously, threatening in its fall to undo the work of centuries.

When man becomes so machine-ridden that, automaton-like, he loses his soul, or so babied by a paternal government that both spirit and intelligence atrophy, or breeds so prolifically that only war or pestilence can reduce his numbers—then civilization begins to topple.

As individuals we must share in maintaining our civilization—the triumph of all history. As physicians we have a still heavier duty, that of pointing out the breaks in the structure and the dangerous leanings not recognized outside a group of scientific men. One of the dangerous leanings today is the poor nutrition prevalent in modern society. Pure deficiency disease is rare but the cases of partially deficient nutrition are legion.

Those of us who spent our days examining drafted men were shocked by their miserable bodies—stunted growth, underweight, lax muscles and ligaments, bad teeth and worse physical endurance. I recall that in the first week our staff began to despair of finding men up to

the rigid army requirements. That this was true nationally and not locally was evident by the lowering of the requirements day by day, until men who had been rejected unconditionally at first were later recalled to service. Our American experience was but a duplication of England's. The great draft brought out the amazing fact that most of our people live in a state of ill health. Few of them know what good health is, and only a limited number ever realize optimal health. We cannot blame heredity for this because these examinations found defective bodies in the children of rugged Scandinavians, sturdy New Englanders, and of our strongest races. Apparently their dietary could not be blamed but only apparently. In reality these undernourished men had a wide variety of foods as compared with that of their ancestors. The quality of their food however was bad.

In our hospital work we see daily evidence of early wearing out of heart, vessels, or kidneys caused, not by toil or syphilis or alcoholism, but by a life-long diet deficient in calcium, in other mineral salts, in vitamins, and in essential amino-acids. The purpose in my paper is to discuss these needed factors of our food.

The first real proof—not conjecture—of the existence of vitamins was made in 1906 by Prof. Hopkins of Cambridge, England.

He fed two groups of rats upon sufficient protein, carbohydrate, lard, and mineral salts. To one group, however, he added 2 c.c. of milk daily per rat. Both groups were weighed every 24 hours. By the 8th day the milk rats had gained an average of 21 gms. per rat, the milkless ones only 4 gm. Then the diet of the two groups were reversed with a rapid gain in the lean group and a slow loss of weight in the fat group, until on the 50th day the lean group still gaining had outstripped the others in weight. The significance of the experiment lay in the magical properties of one-half teaspoon of milk per day. The next step was of course to de-

*Annual oration, meeting of Middlesex South Medical Society, April 16, 1926.

termine what part of the milk contained the vital principle.

In 1909 Stepp grew rats successfully on bread made with whole milk, but when he extracted the fat from the bread by alcohol-ether the rats failed rapidly. They gained again when fed the alcohol-ether extract. Therefore, he argued, the unknown substance lay in the lipids of milk, but not in the butter fat because this failed to stimulate growth when used in place of the alcohol-ether extract. At that time Stepp did not know that not only was the vitamin A extracted but also vitamin B—both vitamins being needed for successful growth in rats,—hence the apparent failure of the butter fat.

MacCollom, Davis, and Osborn, among other experimenters, showed that a very unwholesome diet for rats—but normal as far as fat, protein, carbohydrate, minerals, and caloric needs went—could be made rapidly wholesome by substituting butter fat for lard in the diet, although the butter had been treated by heat as had the lard.

From 1912 to 1915 many similar experiments demonstrated the existence of this mysterious substance in the cream, called vitamin B by Funk, but no one explained the conflicting results until in 1916 MacCollom proved the existence of a second vitamin (water-soluble B) in the milk sugar. Although he used the purest milk sugar obtainable, that made by Kahlbaum, it still contained, unknown to him, a vitamin. By repeatedly recrystallizing the milk sugar he succeeded in extracting its vitamin and triumphed in his experiments.

He fed rats with a synthetic mixture of casein, lactose, butter, and an equivalent salt content of milk. The animals did well. He then replaced the lactose with polished rice. The rats developed symptoms of multiple neuritis (beri-beri): and were speedily cured by adding lactose to the diet. Thus he was driven to the conclusion that the milk sugar contained an essential food factor beyond mere carbohydrate. Again he caused neuritis in his rats by employing his recrystallized milk sugar; and cured the disease by adding to their diet the washings used in the refining of his sugar. Later he and others found this active principle in wheat and especially in yeast. MacCollom in 1916 suggested the names Fat Soluble A and Water Soluble B for the vitamins discovered.

Without doubt the discovery of one food factor would have been made years before had there been one instead of two vitamins needed in the growth of rats. Indeed it is lucky that rats were used in experimentation because these animals require but two vitamins and seem to be able to synthesize the antiscorbutic vitamin (water soluble C) in their own tissues. Human beings need at least 3 factors,

probably more. Had the scientists experimented upon man the problem would have been almost beyond solution because these vitamins are recognized neither chemically, nor microscopically, nor by any law of physics. They can be determined only by animal experiments—a modified vivisection without the use of the knife.

There are three well recognized vitamins, a doubtful fourth, and probably several others undiscovered as yet. Vitamins are needed for plant as well as animal life. Bottomly and Mockeridge of England have proven that rotting manure or leaf mould contains a water soluble vitamin, similar to W. S. B. They found that poor soils fertilized with such manures produced richer plant growth than those treated with fresh manures. The secret seems to lie in bacterial activity, as though the bacteria themselves fabricate the vitamin. The richer the bacterial content of a manure the higher the vitamin potency.

All known vitamins have their source in the chlorophyll of plants. The vitamins of the cod's liver come originally from the green life floating in the sea. The vitamins of the cow's milk are obtained from the green grass she eats. Milk is a carrier, as it were, of body building stones and vitamins from green grass to the calf which is unable to graze for itself.

The anti-ophthalmic vitamin, Fat Soluble A, also a few years ago considered anti-rachitic, is found abundantly in cod-liver oil, cream, eggs, glandular meats (viz. liver and kidney), and green leaves such as spinach, kale and lettuce. It occurs sparingly in steaks, and roasts, in certain vegetables and fruits, is almost absent in milled cereals, and wholly lacking in vegetable oils, margarine, and lard. It is resistant to heat but likely to be destroyed by prolonged cooking as in stews. Cod-liver oil contains 100 times as much as does butter. A significant fact is that this oil is sold widely in all drug stores in So. America, where native foods generally are poor, as a sovereign remedy for malnutrition and colds. Much of the so-called cod-liver oil on our markets is said really to be shark oil which however is equally rich in the vitamin.

Because yellow corn, yellow sweet potatoes, yellow bananas, and carrots are richer in F. S. A. than other grains and tubers Steenboch advanced the theory that the active principle lay in the yellow pigment. This apparently explained also the vitamin wealth of egg yolk and cream, and especially of the body's yellow fat described by Kramer as "glandular" fat or as the "cholesterin glands" of the body. The theory seemed to be sound until Miss Stephenson of Cambridge obtained a colorless butter fat by mixing cream with powdered charcoal and petroleum, filtering off the

charcoal, and removing the petroleum by slow distillation. This decolorized butter fat proved on trial as potent as the natural fat used as a control.

F. S. A. is far more important for the growing child than for the adult. All animals store it in the body. A nursing mother will supply it in breast milk to her baby long after she ceases receiving it in her food. This was repeatedly demonstrated in Germany during the war. Cow's milk in summer is four times as rich in F. S. A. as it is in winter. Cows grazing in a hillside pasture produce not only richer milk but much richer vitamins than do the dairy cows shut in barns and paddocks and given dried or transported food. For years my local Board of Health has analyzed and recorded the fats and total solids of all the milk sold in the town. Invariably the cow of the old fashioned pasture makes a better showing than do the cows of the larger dairy.

Deficiency of F. S. A. in food causes two diseases, Xerophthalmia, a conjunctivitis with abnormal dryness of the eye ball, and nyctalopia (night blindness). Both are prevalent in India and Brazil and in Russia during the Lenten fasts. MacGovern in his recent book, "To Lassa in Disguise," speaks of night blindness among the poorly fed carriers between India and Thibet. About Calcutta, where this blindness is especially prevalent, the popular remedy is to poultice the eyes with crushed goat's liver and to feed the liver by mouth. The same remedy is used in Japan. Dr. Wells of the American Red Cross in Rumania cured many of the destitute children suffering from xerophthalmia by adding cod-liver oil to the food.

There is good reason to believe that an insufficiency of F. S. A. increases susceptibility to tuberculosis and to other infections. Whether it is the same vitamin as that necessary for fertility in reproduction is still unknown.

The question as to F. S. A. being also the antirachitic factor—sometimes called Fat Soluble X—remains an open one. MacCollom believes them to be two separate substances. He found that the amount of cream sufficient to ward off xerophthalmia failed to prevent rickets, even when the cream was increased to five times the amount required by the body. In these cases a small quantity of cod-liver oil was efficacious.

More recent work seems to show vitamin X is more resistant to chemical changes than F. S. A., that, while both A and X occur in the same oil, the former may be destroyed by oxidation, the latter retaining its full antirachitic potency.

Out of the mass of recent literature concerning rickets we may pick out several salient facts. The English generally believe that lack

of F. S. A. is the sole cause of the disease. Hess and Unger of N. Y. claim that the antirachitic factor is of less importance than diet, hygiene and sunlight. MacCollom and his co-workers have shown that the causation of the disease involves three factors—(1) the antirachitic principle, (2) the balance between phosphorus and calcium in the blood plasma, (3) the degree of absorption of their mineral salts from the intestine. His experiments have proven the seeming paradox that an increase of calcium intake in preëxisting rickets with low phosphorus plasma-content and lack of F. S. A. will exacerbate the symptoms. Any disturbance of the phosphorus and calcium concentration in the plasma invariably increased the severity of the disease. It now seems evident that the deposition of calcium in the growing bone is due to the high phosphorus concentration in the infant's serum, 5.4 mgm. per 100 c.c. The adult's contains 2.1 mgm. per 100 c.c. of serum. This would be quite in keeping with the rapid bone growth necessary in a child as contrasted with the slower replacing of worn out bone in the adult.

The ultraviolet rays of the sunlight or from a quartz lamp are a specific for healing rickets, probably by their direct action on the serum content of Ca and P.

Cod-liver oil and sunlight are interchangeable in the therapeutics of the disease, each replacing the other with identical results. The sunlight must be direct, because ordinary glass filters out the ultraviolet rays, as to a less extent does heavy or dark clothing.

One of the experiments of Dr. Bovie of the Huntington Memorial Hospital typifies the clinical effect of the ultraviolet rays. He divided a large number of chickens into 3 groups; the first confined in a greenhouse of ordinary glass, the second in a similar house with one side open having access to free light, the third group in a greenhouse lighted by a mercury vapor quartz lamp. The chickens of group 1 were puny and rickety; those of group 2 not remarkable, just like ordinary chickens; while those under the quartz light were larger, heavier than the others, and their bones, as shown by roentgram, developing vigorously.

During our dark New England winters we may come to use the quartz light in children's playrooms and hospital wards.

Cod-liver oil, if made alkaline and saturated with oxygen, will give off ultraviolet rays to a properly sensitized photographic plate. Cottonseed and olive oils fail to do so. Conversely, these inert oils gain and retain the antirachitic vitamin if sufficiently exposed to the ultraviolet rays. We may regard, therefore, the vitamin literally as bottled radiant energy.

The life of the islanders of Lewis in the Hebrides bears out this statement to remarkable de-

gree. Probably few people of Europe live in less hygienic conditions—on a cold sterile island in the north Atlantic, in a climate largely of rain, fog, and snow. They live in long, low, thatched houses often without chimney, window, or floor. Cattle occupy one end of the room which is so dense with peat smoke that sore eyes and tuberculosis are endemic. The babies see daylight but seldom, and then for a short time. Here is every condition favorable for rickets save that of diet. These people eat cods' heads stuffed with cod liver, potato, turnip, fish, milk, and oatmeal. The vitamins of the cod's liver very effectively supply the missing radiant energy of the sun. The mothers' diet is so good that the infant mortality in Lewis compares favorably with that of any place in Great Britain. We are forced to the conclusion that cleanliness and hygiene are far less important than a proper diet.

Today advanced rickets is rare. Incipient rickets, however, deserve the closest attention. Among my school children I am amazed to see how often I have overlooked the disease in my own patients until they strip for the school examination. I believe that well over 50% of children of well to do parents show unmistakable signs of the disease. We must remember that incipient rickets is a systemic disease rather than one of the bone. It shows itself in the nervous, high-strung child, in the one who plays alone because he can't keep up with his fellows, in the child of weak muscles, pot-belly, relaxed spine, "angel-wing" scapulae, and decayed teeth. Restless sleep and sweating, especially of the head, are prominent symptoms. The frequent delayed dentition may be hastened by feeding cod-liver oil—to the mother if the baby be breast fed. Reports have been published of cows being fed cod-liver oil to increase the vitamins in the milk. Probably this was experimental. Practically those cows grazing in grassy pastures are to be depended upon rather than shut-in dairy cattle fed on an expensive oil.

Several by-products have evolved from animal feeding experiments. Up to 1923 quail had never been hand-raised in sufficient numbers to maintain a game preserve artificially. In the spring of that year the superintendent of the Virginia game farm reared and released over 2000 native quail. His success came from the recognition of milk as the best food known. He fed the newly hatched birds on skim milk clabber until they were able to forage for themselves.

Another success has been that of rearing menagerie animals. Heretofore all lions born in captivity soon became mangy and so crippled from rickets as to be unfit for exhibition although supplied with expensive meats. Now, when they are fed on fresh glandular organs, crushed bones and marrow, and given whole

pigeons and rabbits to eat, thus obtaining vitamins and suitable proteins, they grow magnificent manes and bodies free from rickets.

One reason why dogs easily develop rickets and cats do not is that the former eat civilized food deficient in minerals and vitamins while the cat always feeds largely on whole mice and whole birds which supply these needed factors.

It is hard to realize the damage which rickets have done to the white race. The general deterioration of physique, despite superior housing and hygiene, cannot be reckoned in money value. Decayed teeth are but a part, though an important part, of this deterioration caused by nation-wide deficiencies of the anti-rachitic factor and the mineral salts of modern food. Early man had perfect teeth. Modern man has very bad teeth. Egyptian mummies show often the teeth worn to the gums from grinding the grit which was mixed in their meal, but never caries. Stefánsson brought to the Peabody Museum, here at Harvard, 96 skulls were broken, but none decayed. The 9th to the 13th century. Some teeth of these skulls were broken, but none decayed. The present Icelanders suffer considerably from dental decay because they have forsaken the simple vitamins and mineral rich foods of their ancestors for the palatable but poor quality diet of today. They eat muscle meats, degerminated cereals, white flour, tubers, legumes and sweets in place of the ancient diet of milk and mutton, fish and game, and wild-fowl eggs.

The first damage to the teeth is done while the infant is still in utero. "The teeth are developed and enameled" in the months just before birth. It is a fact that today an unborn child is predestined to bad teeth unless his mother be given foods rich in the calcium-depositing principle and the essential mineral salts. How rare this diet, is proven by the teeth of the younger school-children of our country.

The permanent teeth develop early in life just under the primary ones, and then the infant requires in his diet (it was his mother's before) the same food elements. Good teeth for a child begin with his mother, but must continue with the child. Thoma asserts that the excessive eating of candy or sugar favors caries in childhood because the sugar extracts the calcium already deposited in the tooth substance.

In a collection at Washington of early skulls from all over the Americas and the Pacific Islands, only one decayed tooth was found. These ancient peoples ate raw foods, blood, viscera of animals, entire sea foods, and whole grains—not the muscle meats, sweets, and degerminated grains of today. It is only fair to say, however, that these skulls probably represent those surviving the perils of childhood. In those days only the sturdiest children did survive.

By a cruel natural selection defective children, who live today, then would have perished.

Those races of Europe, Asia, and Africa who maintain their old dietary possess perfect teeth. Cleanliness thereof is of minor importance; diet is of the greatest. An African negro brushes his teeth with a frayed twig when he cleans them at all. It is up to the dental and medical fraternity, or rather to the family physician, to emphasize the importance of a proper diet for mother and child.

Water Soluble B, the antineuritic vitamine, exists chiefly in yeast, in the glandular meats (kidney, liver, sweetbreads, and brain), in milk and egg, in green vegetables, and in the husks and germs of grains. It is wholly absent in fats, in molasses and sugars, in white bread, and in most of our breakfast cereals. Tomatoes and germinating seeds contain it in abundance, steaks and roasts sparingly.

The history of its discovery is interesting.

In 1897 Eijkman, a Dutch physician in Java, induced polyneuritis (the analogue of beri-beri) in fowls by feeding them polished rice—that is the rice kernel without the husk or germ containing the vitamine. Vice versa he speedily cured all ailing fowls by feeding them either the whole rice or the husks alone. Similar experiments upon state prisoners afflicted with beri-beri gave the same clinical results as with the neuritic fowls. Curiously enough Eijkman's work was forgotten for ten years, although during that time Dr. Chamberlain in the Philippines succeeded in reducing the number of cases of beri-beri among the Filipino Scouts by replacing the polished rice by beans and by the whole grain. In 1912 Water Soluble B, named then "vitamine" by Funk, became recognized through the work of a number of widely separated investigators. About this time, Funk, starting with 200 pounds of yeast through a process of eliminating inert ingredients, obtained finally 1/12 oz. of a substance which he believed to be 100% pure W. S. B. It was so high in antineurotic potency that one-fifteen thousandth of an ounce would cure in two hours a pigeon dying of polyneuritis. Later Funk changed his belief about the 100% purity. He came to think that W. S. B. really contains two vitamins which he calls W. S. B. and W. S. D. He arrived at this conclusion by treating his yeast extract with Fuller's earth. The part absorbed by the earth has antineuritic properties: the filtrate has not but does stimulate the growth of yeast cells.

Dr. Emmett of New York comes to the same belief from the fact that W. S. B. used to cure polyneuritis in pigeons and the W. S. B. used to stimulate growth in rats differ so greatly in heat resistance as to be two distinct substances.

To us here in New England the antineuritic factor is of but academic interest as long as

food is plentiful. But should we enter upon such a war as Central Europe recently endured this vitamine would equal diphtheria antitoxin in medical importance. Civilization, as population increases, makes vitamins harder to obtain. Each decade our crowding peoples consume less milk and green vegetables and eat more white flour, degerminated cereals, and pure carbohydrates. At the tables of our well to do patients each individual probably gets five times the necessary vitamins of all kinds. But in the diet of the very poor the vitamine supply is very low. Let a real food shortage come, and deficiency diseases surely will appear as they did in Russia and the Balkans from 1915 on. Hess claims that the high infant mortality in Manila—430 out of every 1000 infants under 1 year of age—is due mainly to beri-beri in the nursing mothers. The babies fail to get W. S. B. in the breast milk.

The disease occurs in two forms, the wet and the dry, namely beri-beri with oedema and that with atrophy. It begins as a simple catarrh. Swellings appear on the legs, with aches and pains and bilateral weakness of the limbs. It may last for years, the patient finally dying in paralysis.

Dr. McCarrison of India insists that W. S. B. should not be called the antineuritic vitamine. In his autopsies on pigeons dying with polyneuritis he learned that the nerve lesions were only a part of a general nuclear degeneration throughout the body organs. In fact the nerve lesions were less remarkable than those of the thymus, testicles, pancreas, heart, liver, and kidneys in the order named. The adrenals, on the contrary, were enlarged: and the increased secretion of adrenalin into the blood stream seemed to have some relation to the oedema so often present. The clinical symptoms of his diseased pigeons followed closely the relative severity of the organs affected. When the sick birds were given W. S. B. the nerve symptoms were the first to disappear, indicating, to his mind, that the nervous system was organically damaged least of all. He proposed that instead of "antineuritic vitamine" the substance be named "nucleoplast" (nucleus nourisher).

In the tropics a high rice diet is almost synonymous with protein starvation. By comparing the clinical observations of Indian and Chinese famines with those of the German and Russian food shortages it seems proven that war oedema and wet beri-beri are closely akin, due to a triple deficiency of protein, W. S. B., and calcium.

Water Soluble C prevents scurvy. Apparently it also is needed for the healing of wounds. It occurs richly in fresh fruits and vegetables, particularly in orange, and tomato, and sparingly in milk provided the cow is given

fresh food. This vitamin, unlike F. S. A., is unstable, being destroyed or weakened by heating, particularly in an alkaline medium. Oxidation readily destroys it if the food be stirred while cooking. It is retained best in an acid medium, as in orange or lemon. Even canned tomatoes, being acid and sterilized without stirring, retain sufficient vitamin to prevent scurvy. For our W. S. C. in daily food we rely almost wholly on fresh salads and fruits. The ordinary canned vegetables are useless for this purpose.

In 1795 lime juice was first prescribed by regulation in the British navy as protection against the scurvy of sea voyages. It failed so often in its purpose that investigators began to seek other causes than the supposed acid deficiency. It was not known at that time that the limes were usually too old, or the juice adulterated, and that the West Indian limes were only $\frac{1}{4}$ as strong in W. S. C. as the Mediterranean limes.

Capt. Cook on his voyage around the world had insisted upon fresh food as necessary for the preservation of health among his crew.

Stefansson, from his Arctic experiences, came to believe that salt in the meat was the cause of scurvy, and he denied salt to his men. He too was emphatic in his belief that fresh foods contained the antiscorbutic factor.

A. E. Wright, in 1895, asserted that scurvy was essentially an acidosis from an exhaustion of the body's alkaline reserve caused by excessive consumption of acid foods, particularly beef, eggs, oats, and barley. Later experimenters offered the theory of infection supported by the finding of organisms in the blood of scorbutic guinea pigs, which when injected into healthy pigs produced hemorrhages—one of the clinical signs of scurvy.

In 1912, however, Holtz of the University of Christiania proved conclusively that guinea pigs could be given scurvy by feeding cereals and bread, and cured by adding fresh vegetables to the diet. Moreover, in 1920, Givens and Hoffman, in careful studies, were unable to find organisms in the blood or joint tissues of scorbutic guinea pigs.

Recently a remarkable demonstration of deficiency disease was afforded at the siege of Kut. Indian and British troops were besieged there from Dec. 15, 1915, to Apr. 16, 1916. The British ate white flour, canned meats, and fresh horse flesh. They, having W. S. C. in the fresh meat, did not develop scurvy, but did suffer from beri-beri because their food was lacking in W. S. B. On the other hand the Indian troops were spared beri-beri having W. S. B. in their barley meal, but did develop scurvy because they refused the fresh horse meat—their only source of W. S. C.

Of Pellagra, another deficiency disease,

there is time for only a few words. The most comprehensive study of its etiology was made in 1916 by the U. S. Public Health Service on the inhabitants of seven South Carolina villages. Briefly the conclusions reached are that the disease is caused by a deficiency of vitamins A and B, of sufficient protein of good quality, and of essential mineral salts: and that the disease may be prevented and cured by an adequate supply of animal protein foods—milk, eggs, and meat, which contain these needed factors.

Pellagra has existed for centuries in Italy and France. Previous to 1890 it was unknown in the United States. In 1917, 170,000 cases were reported in the southern states. The reason is evident. Up to 1890 the southern poor families produced their own garden truck, chickens, and milk. Since that date and the incoming of the mill industries they depend more and more on the grocer for canned goods, milled cereals, pork, and molasses. When they fed on a farmer's diet they were pellagra-free. When they changed to a mill-hand's diet off the grocer's shelves they became susceptible to the disease.

Only recently have we learned that there are proteins and proteins, some superior, some good, and some poor; that one kind of fat is more wholesome than another; and that raw carbohydrates are more valuable than pure sugars.

The bulk of our body is protein, and the adult body must maintain a protein equilibrium. For that protein lost in the feces and urine an exactly equal amount must be absorbed from the intestine. The master key, however, to modern protein metabolism is the fact that the body requires more than one kind and more than one quality of protein.

In our college days we were taught the molecule of egg albumen, for instance, was so large and hopelessly complex that no human mind could unravel it. The problem was like that of playing auction-bridge with a hand of 130 cards instead of 13. Later on it was found that this complex heavy molecule could be broken up into a chain of simple chemical links, and these links could be broken in turn, by the digestive ferments, into amino-acids. These amino-acids are the real factors of protein metabolism. We recognize them now as "building stones" for the growing body and as repair material and replacement units for exhausted and dying tissues. The realization of the relative merits of the 18 or more amino-acids constitutes the foundation for scientific protein feeding.

Animals, unlike plants, are unable to manufacture these building stones within the body and are compelled to get them by eating the flesh of other animals or the plants themselves.

The body cell selects those amino-acids it needs and discards the rest. The unused amino-acids are burned in the body as fuel exactly as are the fats and carbohydrates. Proteins vary so greatly in physiological value that Lusk has suggested that we classify them as A. B. C. etc., in the order of merit. Roughly we put them into three groups:

Superior proteins—Those of milk, egg, glandular and muscle meats, the animal group.

Inferior proteins—Those of grains, nuts, legumes and tubers, the vegetable group.

The third group, gelatine, is less valuable by itself than any of the others because it lacks the amino-acids, tyrosine and tryptophane, both of which are essential to life. If these acids be added to gelatine it serves fairly well.

Every protein contains—more properly speaking, yields upon digestion—a varying number of amino-acids. These acids, in turn, vary in their constructive and replacement values to the body. For example, casein is probably our most valuable food protein. Nearly all the tissue proteins required in the body may be made from it, with fewer amino-acids to be rejected as waste. As a type of an inferior protein food, the bean contains 23% of its weight in protein, of which only 3% can be utilized by the body cells. The remaining 20% is oxidized and the nitrogen eliminated by the kidney. As shown by J. J. Abel our blood contains amino-acids in solution ready to be absorbed by the cells and used as building stones for growth or for repair. Relatively still more amino-acids seem to be stored in the muscles and released as "circulation protein" as food for the cells during a fast or starvation.

We know that for growth at least two amino-acids always must be present, lysine and cysteine; and for maintainance of body weight tryptophane and lysine. These facts make it evident that the growth and the maintainance of a cell are two separate physiological functions.

The question naturally arises why, in sickness, we may not feed amino-acids directly, in place of the more complex proteins. In time this may come in spite of the chemist's objection that the colloid protein is more adaptable for food to the body than the crystalloid amino-acids which, moreover, lack flavor, aroma, and vitamins.

Certain foods are valuable because they supplement the deficiencies of other foods. Milk is distinctly such a protective food because of its supplementary qualities. Its peculiar richness in the best amino-acids, its large content of calcium and phosphorus, the high quality of its butter fat make it our most valuable food and the world's chief source of F. S. A. Muscle

meats, kidney and liver surpass milk in supplementing the proteins of legumes and cereals, but are inferior in other respects. Milk alone is not a perfect food. It is too bulky, lacks iron, and is deficient in W. S. B. Yet it stands without question as our chief reliance in feeding the sick. Its amino-acids are the best for the repair and replacement of worn tissues. Its fat is the quickest and most completely absorbed of all fats by the intestine. The cereals, breadstuffs, gruels, jellies, and predigested foods are not in the same class with milk when we consider the needs of the sick.

W. D. Bell in his recent book, "Wanderings of an Elephant Hunter," gives remarkable testimony to the food value of milk. African elephant hunting is probably the heaviest and most fatiguing work on earth. Bell starts his hunt at 6 a. m. on an empty stomach. After three hours' hard tramping he drinks a gourd of soured milk. This morning milk sustains him all day, there being no time to stop and prepare food. At night he drinks sour milk again and finishes his meal with antelope steak frizzled over the coals. Just two articles of food to do the most strenuous work in Africa. The natives mix their soured milk with fresh cow's blood—a perfect food—but Bell remarks that he could not get accustomed to this. He claims that on a soured milk diet one does not become lethargic as after eating meats, nor thirsty as after a farinaceous meal. He says: "As regards the thirst resisting qualities of the grain and meat diet as opposed to the milk and meat diet there was no comparison. My headman, who shared my milk, once went three days without either food or drink, whereas a grain-eating boy who became lost was rescued just in time after only 36 hours without water."

Rather interesting is the fact that the soured milk of the tropics contains not only lactic acid but also an appreciable amount of alcohol from fermentation—a sort of near-beer milk.

The secret of milk's efficiency as a food lies in its being a collection made by the mother cow from green vegetation of vitamins, choice amino-acids, calcium, phosphorus, sodium and magnesium—all or nearly all the requisites, save iron, of an excellent food.

Eggs should not be eaten to supplement milk and meat but rather breads, cereals, and vegetables. Eggs contain everything needful for growth and tissue repair, including all three vitamins. They lack calcium because man does not eat the egg shell. The developing chick absorbs from the shell what calcium may be required. For it there can be no deficiency.

The main defect of modern food is that it is too refined, that it does not retain all the substance of the crude state. The man living on the seashore in ancient times ate enormous

quantities of shellfish as the kitchen middens of the European coast bear witness.

These shellfish were eaten whole supplying him with vitamins, amino-acids, and minerals woefully lacking in modern food. Hunters in Africa testify to the negroes' fondness for the viscera as food when game is killed. They eat literally all the animal as do most savage peoples. I have seen a Filipino hunter cut the heart out of a deer, put his lips to the great vessels and drink the hot blood, a disgusting but excellent food. It has long been noted that the lion first laps the blood of his kill, then rips open the paunch and devours the soft organs, often as a relish, licking the hide from the body with his rasp-like tongue. Instinct guides him to those proteins best suited for his growth and maintenance. Unlike man who prefers the muscle meats he makes them his last choice. An analogous condition lies in our use of the cereal foods. Man of today eats white flour rejecting the best of the grain, that containing the minerals, the best amino-acids, and the vitamins. This misfortune is unavoidable. Modern flour must keep indefinitely in storage, unspoiled and free from insects. It must bear shipping to all climates. In these requirements whole wheat flour fails. The pulverized wheat germ contains an oil which soon becomes rancid and ill-flavored in warm weather. The oil attracts insects which infest the flour with their eggs. Practically good whole wheat flour is obtainable only in cold weather. The farmer of past generations brought his wheat to the neighborhood mill and carried home the flour on the same day. Now flour is our greatest commercial staple moving in thousands of tons across land and sea every day of the year. White flour, when not supplemented by other foods, is wholesome as far as it goes, but it does not go far. It makes a bread which is very palatable and requires chewing. It lacks calcium, phosphorus, sodium, chlorine, iron, and all the vitamins. Of its two proteins, gliadin and glutenin, each fails to supplement the other's deficiencies. So, when summed up, white flour is a poor food desirable because of three qualities, storage, transportation, and palatability.

Corn, in its dietary properties, closely resembles wheat. Among the poor families of the south, corn constitutes 1/4 to 1/3 the total food intake. It is from these people of the southern corn-belt that pellagra takes its victims. Our northern white corn possesses more F. S. A. than does the southern variety. Both are rather low in W. S. B., and almost deficient in W. S. C. unless the germ be fermented when they become markedly antiscorbutic. Like white flour, the commercial cornmeal does not contain the germ because it is rich in oil, easily becomes rancid, and attracts insects. Only

at the countryside grist mills can one obtain the old fashioned whole corn meal.

The staple food of whole communities in the southern states is hog, hominy, and molasses. A stranger can not realize the deficiencies of such a diet until he has lived among the people themselves. By the end of a week he is so desperate for fresh vegetables and fruit that he dreams of them in his sleep. Hookworm has been blamed for the poor physique of the Georgia and Florida cracker. Nevertheless their food deficiencies have done much to deteriorate the sturdy bodies of their English forefathers. Milk is little used. It is reported that there is but one cow to every 10 or 12 people in the Gulf states; and these cattle are often small, scrawny, and poor milk producers. In the tide-water districts the local beef is white instead of red meat—why I do not know.

Rice is the principal food of over half the human race. Three varieties are known commercially. Red rice is the whole rice. The white variety is the germ and husk-free grain coated with talcum powder to give a cleaner and more attractive appearance. The brown rice is the same as the white but without the talcum. Few of us ever see red rice. It is eaten mainly by the rice farmer who threshes and winnows his grain by the primitive methods of centuries past. He escapes beri-beri, but not so the rice eater who lives on the white variety.

Peas and beans have been long esteemed for their high protein content—almost double that of the cereals. Chemically therefore they show up well, but not in practice. They fail to supply the proper amino-acids in feeding experiments over long periods of time. MacCollom says, "There is something lacking in the molecules of peas and beans which limits the extent to which they can be converted in the body into tissue proteins." We should heed this fact in the treatment of nephritis with a high non-protein-nitrogen in the blood. A sufficient intake of protein to balance the body's need is essential, an excess detrimental. Since the amino-acids of the major portion of pea and bean protein is rejected as waste by the body cells (20% in the bean), the resulting excess nitrogen constitutes an additional accumulation in the blood and an over-load upon kidneys already eliminating poorly. In such cases the superior proteins supply the needed nitrogen, with a minimum amount to be released into the blood stream as waste.

In contrast to peas and beans, the potato with its 2% of protein is a very valuable food. Hindhehe reports the case of a man living nearly 300 days on 2 to 4 kilograms of potato with a little margarine daily and nothing else. Apparently he kept healthy. What food factors the potato does possess are of high quality and

well adapted to the body needs. Its vitamins are contained largely in the inner skin and lost if this be not eaten with the starchy part. Its proteins are inferior to those of the grains in promoting growth but peculiarly valuable in replacing tissue waste in the adult. If eaten raw it is highly anti-scorbutic. Its starch is a source of energy and is combined with sufficient roughage (cellulose) to make the potato one of our best root vegetables.

The root vegetables, in general, belong to the fodder group of foods. Their proteins are of poor quality and require those of the superior group (meat, milk, and eggs) to supplement them. Much of their amino-acid content cannot be utilized in the body and must be deaminized by the liver, the nitrogen helping to form urea and as such excreted in the urine. Used alone they contain insufficient vitamins and minerals, particularly calcium and phosphorus, to make them sustaining foods. Since they are composed largely of cellulose their chief merit—and that not an insignificant one—is to furnish bulk to our food. Without this bulk constipation and its attendant evils result. Clinically it is noteworthy that diabetics under treatment rarely are constipated because of the large amount of roughage eaten.

The green vegetables, spinach, kale, dandelion, and lettuce, etc., stand in a class alone. Their mineral wealth supplement a corresponding deficiency in grains and nuts. Thin green leaves are richer in all desirable factors than the thick and the whitish leaves, which, indeed, approximate the tubers and grains in food characteristics. We of the temperate zone neglect the green vegetables as compared with the natives of China and of parts of the tropics. There bamboo shoots and greens of various kinds form a staple of the diet, supplying those factors lacking in the other native foods.

Fruits, contrary to popular belief, are real foods. Although they have little protein and fat and but small stocks of carbohydrate they are particularly valuable because when oxidized in the body they leave an excess of alkaline radicles. Grain and meats, on the contrary, leave an acid ash. Hence the necessary maintenance of the body's acid-base equilibrium to those of us who eat meat in excess make fruit a very essential part of the American diet. In cases of gall bladder disease, of nephritis, and of sickness in general, fruits along with potato and milk are probably our least harmful foods.

We know little about the mineral requirements of the body. We surmise more. The motif, so to speak, of mineral metabolism seems to be the delicate balance in the plasma between the mineral salts in order to maintain the body functions, each salt playing its part

in the symphony and not to be replaced by any similar salt.

Calcium, magnesium, iron and phosphorus—all are utilized daily in the wear and tear of the bones, nerve tissues, and glandular organs. Of calcium only milk, green vegetables, and oatmeal contain appreciable amounts. The clotting of the blood, lactation, the individual's nervous stability, the effect of digitalis on the heart muscle, the physiology of bone, and the pathology of oedema—in all of these calcium plays a vital part: and a sufficient amount thereof in the food is absolutely necessary for health.

The iron of the hemoglobin is used over and over in a cycle from the red cell's death, storage in the tissues, back again to a young red cell. Only about 6 mgm. is lost per day in the faeces, and very little (8-10 mgm.) is required in the daily food. In anaemia from hemorrhage the body store must be replenished by feeding iron: but in the anaemias from toxic destruction of the red cells, the iron reserves are usually not depleted, and iron medication is futile. The mother stores in her baby's liver, during intrauterine life, sufficient iron to last him 9 to 11 months. Weaning, therefore, is an expression for iron as well as other minerals in his new diet. Mother's milk contains, shortly after childbirth, nearly double the amount of iron in cow's milk. Consequently a bottle-fed baby needs iron earlier than one who is breast-fed.

Those foods leaving an alkaline ash, such as milk, greens, the potato, orange, apple, and banana, are notable in that they tend to prevent renal lithiasis. A preponderance of these foods will give a urine which will dissolve uric acid. On the other hand prunes, cranberries, and tomatoes increase urinary acidity. It must be said, however, that the formation of renal stone cannot be determined so simply. Other factors than diet have to do with the solubility in the urine of any salt. Any change of colloidal tension increases or decreases salt solubility. Uric acid and the urates are more easily precipitated in an acid urine, and calcium oxylate and phosphate in an alkaline urine. To discuss magnesium, iodine, and phosphorus tends to lead us away from diet into physiology. We must realize that minerals are as real foods as proteins, and as important as, if they do not coexist with the vitamins. It has been suggested that a hog, rooting in the ground, is, in reality, seeking the mineral salts lacking in his fodder. Possibly the same thing is true of children and puppies eating ashes and plaster, and the earth-eating habits of certain peoples.

For centuries men have thought more emotionally than scientifically about the merits of

various diets. To meat and more meat was attributed the victories of Grecian athletes. The feasts of mediaeval warriors were little else than a gorge of meats and alcohol with a minimum of vegetables and carbohydrates. Beef and beer made famous the boxers of Georgian England. Possibly a high protein diet does make a dynamic, virile, aggressive people, just as the low protein, high carbohydrate food of India has made a delicate but high thinking people.

A volume of conjecture might be postulated upon just such loose premises as these. Too many other factors—climate, parasitic disease, political storms, religious customs—have moulded man's plastic physique to attribute it to diet alone. Moreover all diets have been a hodge-podge of good and bad. The time will come when the old dispute between vegetarian and meat eater will be only an academic discussion. No longer will the terms vegetarian and meat eater be used, but rather those of superior and inferior proteins, amino-acids, vitamins, acid and base forming foods, mineral salts and their deficiencies. Of course the emotional vegetarian, to whom flesh eating is a crime against his religion, never will be convinced. Of him Dr. MacCollom says in a striking paragraph:

"One who reflects that Moses, David, Solomon, and Jesus ate flesh cannot be deeply impressed by the vitamins argument. Likewise the statement that animals living on a vegetarian diet are strong and tractable, while carnivorous animals are ferocious, does not withstand inquiry. The average bull or belligerent billy goat can strike terror into the heart of man with less provocation than is necessary to render dangerous a lion or a wolf. The gentle and happy disposition of the Eskimo on his strictly carnivorous diet stands in marked contrast to the ferocity with which the vegetarian Bengalese deported themselves during the mutiny of 1857."

Scientific discussion of today centers on the relative merits of high and low protein diets. Voit in 1881 gave 118 gm. of protein daily as needed for an average laborer. This figure was soon disputed and continues today open to controversy.

In 1907 Prof. Fisher of Yale published his widely read paper, "The Influence of Flesh Eating on Endurance." He pitted in tests of endurance a group of meat eaters against a group of meat abstainers. The results were amazing. The tests consisted of deep knee bending, holding out the arms, and similar exercises. The flesh abstainers proved to be 3 to 6 times as enduring as the meat eaters. The victory of the former could not be attributed to previous training or to superior physique. In fact the flesh abstainers had had less previous athletic

training and seemed in appearance to be inferior to their opponents. Explain the results as we may they can be due to but one thing, the difference in the two diets. Prof. Chittenden following Fisher's lead experimented with an average protein daily intake of 48 gm. upon groups of professors, university athletes, and U. S. soldiers. He became converted wholeheartedly to the novel diet. The professors claimed that they were quicker and brighter mentally. The athletes won in games. The soldiers remained quite well and strong. Some of the men refused to return to their former diet.

The outcome of Fisher's experiments brought forth a number of explanations. Neither suggestion, nor the spirit of rivalry, nor tobacco, nor alcohol, nor any material difference in habit or physique could be offered as a solution. The cause had to be physiological. Haig believed that the uric acid producing foods (eggs, beans and peas, meats, and asparagus) caused early fatigue because the uric acid renders the blood collemic and viscous, thereby clogging the capillaries and increasing the blood pressure. This claim is borne out in part by the fact that persons with low blood pressure often have surprising endurance. This was well shown by a series of similar tests at Battle Creek, Michigan.

Chittenden's theory is that in metabolism the carbohydrates and fats are converted into CO_2 and H_2O , both easily eliminated. The crystalline waste products of protein, including urea, overtax the organs of elimination with the resultant accumulation of these waste products in the blood, producing fatigue.

Chittenden's personal experience is worth relating. He had been suffering from rheumatoid arthritis of the knee, periodic headaches, and bilious attacks. Then for 16 months he lived on 36 to 40 gm. of protein per day. In the first 8 months he lost 17.6 pounds, retaining this new weight for the rest of the period. He says that his arthritis, headaches, biliousness disappeared, that he ate better, and that he exercised longer and harder than ever before. For 9 months the nitrogen of the urine was determined daily. It averaged 5.69 gm., indicating an average protein intake of about 36 gm. per day. He believes that a low protein diet is absolutely requisite for optimal health, that high protein intake is self-indulgence, and a needless tax on the liver and kidneys.

What Fisher and Chittenden have claimed is undoubtedly true. American experimenters are able to grow rats to full weight and vigor on a purely vegetarian diet by carefully selecting those vegetables rich in vitamins and minerals. They concede that there is nothing *per se* in a vegetarian diet to prevent good health in

an omnivorous animal. In civilized man, however, the large bulk of green vegetables needed to supply enough mineral salts necessarily overburdens the digestive tract. Furthermore MacCollom makes a strong argument against the low protein diet which had been overlooked by these enthusiasts. He says that Fisher's and similar experiments cover only a small percentage of the life span. Often in feeding his rats he has found that a certain diet will preserve health and well-being for one generation, but is sure to show its ill effect in succeeding generations,—sterility, stunted growth, and feeble musculature. It remains to be proven that man, on a low protein diet, may retain optimal health if this diet be continued a life time and not a small portion thereof.

The Japanese, under the influence of Buddha, abandoned a meat diet 1000 years ago with a resulting diminutive stature. It is said that the Japanese children reared in California are 2 inches taller and physically stronger than corresponding children in Japan. Whether this gain be due to milk, meat, hygiene, or climate is hard to say.

Most ethnologists, in comparing the races of men, believe that those consuming abundant protein are stronger in mind, morals, and body; and that they have greater endurance, longevity, and a more cheerful outlook on life than their protagonists. One fact is certain, that however beneficial a low protein intake may be for adults, never should nutritional economy be practiced by nursing mothers and by children.

The Finns have made themselves leaders among world athletes. Sundstrom states that the diet of the average Finnish peasant contains 136 gm. of protein, 83 of fat, and 180 of carbohydrate (3611 calories). Taking the year around there is, very likely, no harder worker than the Finnish peasant. For him, Sundstrom insists, a low protein diet is impossible, considering his labor and climatic hardships. Tigerstedt reports that the Finn drinks $1\frac{1}{2}$ liters of milk daily. The American of our eastern states takes but $\frac{1}{4}$ liter, that is $\frac{1}{6}$ the quantity drunk by the Finn.

As testimony against such requirements Dr. Hindhehe, of the Nutrition Laboratory at Copenhagen, from his experiences in supervising the Danish food supplies during the war, advocates as ideal the following dietary:

Graham bread—500 gm.
Potato—1000 gm.
Vegetable margarine—150 gm.
Apples—600 gm.
Milk—500 c.c.

Such a dietary promises, he says, splendid health and immunity to indigestion and to disease of the kidney and liver. If ever we should experience a world-wide shortage of food, which indeed may threaten us from our

swarming masses of humanity, such councils as Hindhehe's may become of great value. During his food administration the mortality of Denmark fell remarkably, although some skeptic attributes this to the lowered consumption of alcohol during that period.

Unquestionably the main thesis of the scientific vegetarian is well founded. We Americans do eat too much meat and too little milk, too much fat and too little green vegetable, too much refined sugar and too little carbohydrate roughage. No wonder that in Europe constipation is called the American disease.

The southern Italian peasant, according to Albertoni and Rossi, has lived for generations on cornmeal, greens, and olive oil without milk, eggs, or cheese. The protein intake of the adult is between 42 and 50 gm. Their diet is deficient in vitamins and mineral salts. Consequently these Calabrians are stunted and inferior physically to their Piedmontese countrymen who enjoy a higher caloric and a higher protein diet.

The Bengali of middle and southern India consume daily an average of 33 gm. of protein with an inevitably stunted physique.

Woods and Mansfield studied the dietary of a busy lumber camp in Maine. The 50 men there averaged over 8000 calories per day, protein 164.1 gm., carbohydrate 982 gm., and fats 387.8 gm. They were the heartiest eaters I have found quoted—and few men can equal the Maine lumberman in brute strength and endurance.

Many similar investigations resulting for or against the low protein diet might be quoted. Another method, however, has been employed to determine scientifically the claims of the low protein advocates—the principle of the body's protein equilibrium. In the adult, for every gram of nitrogen ingested, one gram of nitrogen is eliminated. Fat and carbohydrate may be stored or burned so that no equilibrium can be possible but not so in protein metabolism. The rigid fact remains that if a healthy man takes 16 gm. of nitrogen in his food, 16 gm. are eliminated in his urine. Very little comes out in the faeces and sweat. On this basis Chittenden's subjects on a protein intake of 30 to 50 gm. daily eliminated the equivalents thereof, 4.88 to 8.88 gm. of nitrogen daily. Hence it may be stated positively that the physiological processes of these men were in good working order, and that they were really in good health.

Throughout all the arguments pro and contra the low protein diet there lies one basic principle that both sides of the controversy must agree upon—that the main protein requirement is not so much the quantity as the quality of the protein. A flesh abstainer may live for years in perfect health provided that his vegetable proteins be supplemented by those

of milk or eggs. Truly, they are, as MacCollom calls them, "protective foods." According to him milk, and milk alone, determines the physique of a race, regardless of climate, occupation, or hygiene. He seems to prove his case.

The Scandinavians and the Swiss, possessing one cow to every two inhabitants, stand in the front rank of big and hardy peoples. The pastoral Arabs are famous for their magnificent physique. They live on sour milk and dried curds from camels and goats, with dates and some cereal. The Masai, a negro tribe of Kenya Province, East Africa, average above 6 feet in height and are powerfully built. They live almost altogether on cows' milk mixed with cows' blood. As a tribe they are famous for strength, endurance, and fighting ability. Any people whose staple food is milk always is found to be unusually large, strong and aggressive. Where milk is lacking, as among the Sicilians, Syrians, and East Indians, the people are generally small, of light weight, and of delicate limbs.

In grain-growing regions, where cattle raising is less profitable than agriculture, defective health and stunted bodies are common because the cereal diet is not supplemented sufficiently with the protective foods, milk, eggs, and glandular meats. Not only is the body poorly developed, but often defects in man's temperament become inevitable. Without proteins of high-quality amino-acids, man becomes nervous, irritable, low spirited, and tires easily. He believes that much of the nervous instability, so prevalent today, is due to this deficiency, rather than to the high pressure of modern life.

His numerous experiments on feeding colonies of rats give amazing evidence to the truth of this theory. By varying the dietary very little he can make these rats playful or irritable, sterile or fertile, gentle or savage, short or long lived, strong or weak, full grown or stunted. He can predict accurately that a future rat family will live 6, 10, or 20 months as he wills, or that the first generation will be full sized and normal, and their descendants smaller and smaller each generation. Seemingly these defective diets are liberal and sufficient for good health. They include wheat, rolled oats, peas, beans, turnips, potato, radish, beet, steak and ham; and yet, in all cases, the rats do not develop normally. An astonishingly small quantity of milk, or cod-liver oil, with mineral salts added to the diet will bring back the ailing rats to health, and if so continued will keep them in health for generations.

Here are some of the results of a faulty diet. Rat mothers, on low protein, may devour their young. With a high protein diet, these same mothers raise litter after litter with care and affection. With insufficient calcium in the

mother's food, the nursing rats will grow normally for 15 to 18 days and then have spasms, resembling the tetany of children. Fertility diminishes or increases according to the diet used, although sterility under faulty diet is generally restricted to the younger females. The males show early atrophy of the testicles, although sexual activity remains unimpaired. All the poorly nourished animals age rapidly and die early.

Very analogous to MacCollom's rat histories are the statistics he quotes from Galton. It was found that the poorer classes of Coventry, England, died out in the third generation. The slums reared one-fourth fewer children than did the same number of families in the surrounding country. Consequently the country continually recruited the city. The same syndrome of stunted bodies and short lives of MacCollom's rats are thus duplicated in their human analogues of the city.

Personally I feel a deep gratitude to such men as Hopkins, Lusk, MacCollom, and Cannon. They are the heroes of medicine. A great defect of medical science always has been its response to the spectacular. The vivid drama of the operating table appeals to man more than all the laboratory benches of the world. In like manner to us physicians, striking signs and symptoms bulk too largely in our vision. We cannot see the forest for the trees. We look into and not at disease. Its remote causes, hidden in the maze of chemistry and biology, must be revealed to us by the laboratory worker. It remains to him, deeply seeing, far thinking, to encompass a disease in its entirety, and to pass to us his knowledge. We practitioners are the workmen of our profession. We do not invent new tools. They are handed to us from the laboratory and the best we may hope for is to use them skilfully. These new discoveries in nutrition are, in a sense, a tool to be used by us to build up the health and strength of future generations.

ENDORSES A SIMPLE LIFE

SIR THOMAS HORDER, physician to King George of England, urged 500 American doctors to induce their patients to live a more simple life at a congress recently held at London. He believes that one of the chief factors in the cause of diseases today is the hustle of everyday life and the nerve strain involved.

MUST BE CAREFUL

"My husband has been very ill—very ill, so I have to do his shopping, and I want a shirt."

Salesman—Certainly, madam. Stiff front and cuffs?

"O, no! The doctor says he must avoid anything with starch in it."—*Stray Stories.*

OXYGEN CONSUMPTION IN DEMENTIA PRAECOX*

BY J. C. WHITEHORN AND K. J. TILLOTSON

[From the McLean Hospital, Waverley, Mass.]

THERE have appeared in the recent psychiatric literature several communications dealing with the basal metabolic rate of mental cases. The observations reported from Bloomingdale and the Psychopathic Hospital in Boston by Bowman and his collaborators¹, from the Psychiatric Institute in New York by Gibbs and Lemeke², and from the Department for Mental and Nervous Diseases of the Pennsylvania Hospital by Farr³, all agree in one respect, namely, that the basal metabolic rate is much more frequently low than high in those persons whose mental illness has been called schizophrenia or dementia praecox; many of the low figures being, however, within the normal range.

It is the purpose of the present paper to add to this series for your consideration some observations which have been made at this hospital during the last two years.

The technical features of such a study require brief comment. As most of you know, basal metabolism is nowadays usually estimated from a measurement of the rate of oxygen consumption under standardized conditions. In this measurement instrumental precision, in itself, can be readily obtained. We have checked our apparatus of the Roth type by alcohol combustion and found in five tests no error larger than 0.6%. The testing for leaks, which is an essential part of each determination, is given a much greater reliability by graphic recording.

But the greatest source of difficulty is in the person tested. Many of the most interesting cases cannot be studied because they will not keep physically quiet. In those who will keep still, one can only guess whether or not the mental activity is sufficiently quiet to justify the term "basal metabolism." We did try, with Dr. Lundholm, to obtain simultaneous records of oxygen consumption and emotional state by the use of the so-called "psycho-galvanic reflex," but the procedure did not prove reliable in the normal subjects whose introspective reports we trusted, so we abandoned the effort. We question the propriety of applying the term "basal metabolism" to determinations in the case of persons whose mental state at the moment is so difficult to evaluate. We therefore use the term "oxygen consumption." We do not by any means question the value of the figures reported under the more common terminology. Indeed the figures may perhaps strike one with even greater force when freed of the implication that they represent truly "basal" conditions.

Our observations on 11 persons classed under the diagnostic heading dementia praecox, and

on 17 classed manic-depressive psychosis, are averaged and summarized in Table I.*

TABLE I

| Subject | Number of Observations | Per Cent. Deviation from Aub-Dubois Standard |
|-------------------------|------------------------|--|
| <i>Manic-Depressive</i> | | |
| Buv M | 4 | -20 |
| Lan F | 2 | -8 |
| Gra F | 3 | -7 |
| Geo F | 2 | -4.5 |
| Pic F | 2 | -4 |
| Wat F* | 2 | -1 |
| Sha F | 2 | -0.5 |
| Lew M | 2 | 0 |
| Coe M* | 2 | +0.5 |
| Bur M | 2 | +1.5 |
| Wyz M | 2 | +5 |
| Dav M | 2 | +6.5 |
| Mor F | 2 | +7 |
| Emm M | 2 | +8.5 |
| Abe F | 2 | +9.5 |
| Hen F | 1 | +14 |
| Hac F | 6 | +14 |
| <i>Dementia Praecox</i> | | |
| Bar M | 2 | -16 |
| Obe F | 2 | -15 |
| Dou F | 8 | -14 |
| Nic F | 2 | -13.5 |
| Tho M* | 16 | -13.3 |
| Cla F | 3 | -13 |
| Web M | 2 | -12.5 |
| Joh F* | 15 | -9 |
| Fou M | 2 | -8.5 |
| Blia F | 2 | +2.5 |
| Dav M* | 7 | +19 |

*Discussed in text.

It will be noted that the observations in the manic-depressive group have roughly a random distribution, whereas those in the dementia praecox group have a very clear tendency to low values, most of them falling near the lower edge of the normal range.

The dementia praecox case with the high rate might properly have been excluded from this series, since he had Graves' disease, the classical cause of increased oxygen consumption. He was a man of middle age with delusions of persecution and influence, whose mental condition is classified after several years' observation as "Paranoid Condition, probably Dementia Praecox." If his future development confirms this diagnostic impression, he will serve to demonstrate that a continuous over-activity of the thyroid gland does not in itself prevent the development of a schizophrenic reaction.

If he be excluded from the series, the tendency

*Read at the meeting of the New England Society of Psychiatry at McLean Hospital, April 9, 1926.

*The data, originally presented in charts, have been arranged in tables for publication.

to low figures in the dementia praecox group becomes even more pronounced. In seeking for explanations for this tendency, one should consider the avoidance of physical activity by the apathetic persons in the praecox group. What little evidence we have, however, counts against this explanation. Thus Mr. C. of the manic-depressive group consumed oxygen at a trifle more than the normal basal rate, although he was so depressed and retarded that he was physically very inactive. Miss W. was so mute and inactive as to seem like a so-called "catatonic stupor" to some of us with but little experience, yet her rate of oxygen consumption was but 1% below prediction. Her subsequent course and retrospective account bore out the manic-depressive diagnosis. The observations on these two cases incline us therefore to doubt if the slow rates in the dementia praecox cases can be attributed to the tendency to refrain from physical activity.

Table II presents the results of 15 observations on Miss J. and 16 on Mr. T., both subjects being in the dementia praecox group.

TABLE II
OXYGEN CONSUMPTION IN CC. PER MINUTE

| Name and Date | Observed | Aub-Dubois Standard | Per Cent. Deviation |
|------------------------|----------|------------------------|------------------------|
| <i>Miss Joh. D. P.</i> | | | |
| Jan. 5, 1923 | 204 | 225 | — 9 |
| | 202 | | —10 |
| Jan. 30, " | 216 | 225 | — 4 |
| | 203 | | —10 |
| Feb. 21, " | 248 | 225 | cold |
| | 248 | | |
| Mar. 7, " | 215 | 225 | — 4 |
| | 194 | | —13 |
| | 210 | | — 6 |
| Mar. 14, " | 203 | 225 | —10 |
| | 208 | | — 7 |
| Apr. 4, " | 208 | 225 | — 7 |
| | 201 | | —10 |
| Apr. 11, " | 210 | 225 | — 6 |
| | 193 | | —14 |
| Apr. 3, 1925 | 207 | 240 | —13 |
| | 217 | | — 9 |
| <i>Mr. Tho. D. P.</i> | | | |
| Jan. 1, 1923 | 196 | 213 | — 8 |
| | 191 | | —10 |
| Jan. 22, " | 183 | 213 | —14 |
| | 186 | | —13 |
| | 187 | | —12 |
| Jan. 25, " | 178 | 213 | —17 |
| | 190 | | —11 |
| Feb. 19, " | 182 | 213 | —14 |
| | 190 | | —11 |
| Mar. 19, " | 173 | 213 | —19 |
| | 180 | | —16 |
| | 182 | | —15 |
| June 5, " | 184 | 203 | — 9 |
| | 179 | | —12 |
| Mar. 27, 1925 | 190 | 218 | —13 |
| | 178 | | —19 |

Miss J. was a slightly obese woman of 30 when our study began. As a girl she had been bright and

sociable, but with occasional outbursts of temper. For five years before admission to this hospital she had been extraordinarily lazy, irritable at times, and had threatened to pull out her mother's hair. During the time of her residence here, which began a year before our metabolism study, she had been slovenly and apathetic, with rare impulsive acts of violence. In her silly and inconsequential conversation she frequently expressed weakly grandiose ideas—that she was "a Russian lady of high nobility," "an heiress," "a niece of Madison's," an invalid. These roles, while variable, were such as might excuse her from physical activity. During our studies her behavior has remained about the same.

You may see in the table how uniformly low her rate has been. Her oxygen consumption has failed to keep pace with her gain in weight, which leaves her even further below the predicted value than she used to be.

Those who have had or may have some practical experience in this line may be interested in an incidental observation on her. One morning when she came to the laboratory the room was cold. We could not get the temperature above 16°C. This of course prevented the determination of a basal rate. As she was not shivering, however, one of us carried out the procedure as usual, just out of curiosity. She was consuming 248 cc. of oxygen per minute, far above her usual rate and even above the predicted normal. Apparently, therefore, she possessed unimpaired that physiological mechanism by which heat production can be accelerated by cold even without locomotor activity.

Mr. T., a puny boy of 18, with a silly grin, was usually mute, but had occasional outbursts of profanity and violence. He had been a seclusive youth who meekly submitted to teasing at school. He graduated from grammar school and spent two years in a military academy. He was brought to this hospital five months before these observations began, because he stayed in bed, refused to talk and had to be forcibly fed.

Here again the most noteworthy feature of the oxygen consumption has been the persistently slow rate. During all of the first six months studied he was taking small doses of thyroid extract. When the observations were expressed as per cent of deviation from the predicted normal, it appeared that his basal metabolic rate had been brought closer to the predicted normal. A critical inspection of the data, brings out the fact that his rate of oxygen consumption in itself had not increased, but that the appearance of improvement arose from a drop in the predicted rate,—a mathematical result of his loss in weight. His clinical record indicates the probability that this loss of weight resulted from the refusal of food rather than from any direct effect of the thyroid medication. It was considered wise, however, for the patient's sake to discontinue the thyroid administration. At present, nearly two years later, he has more than regained his previous weight. He now consumes oxygen at essentially the same rate as at the beginning.

In summary: We add our observations to the accumulating indications that persons with the mental disorder diagnosed dementia praecox tend as a rule toward significantly slower rates of oxygen consumption, under approximately "basal" conditions, than would normally be pre-

dicted, and that these slow rates are quite persistent in individual cases.

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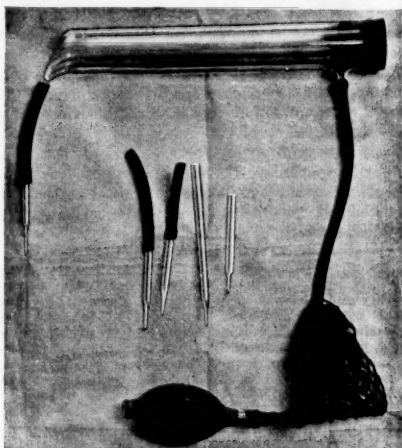
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AN ACCESSORY FOR THE TRANSFUSING OF INFANTS AND CHILDREN

BY DONALD S. ADAMS, M. D., WORCESTER, MASS.

[From the surgical service of Memorial Hospital]

The transfusing of infants and children is at best a difficult procedure. The various types of syringe transfers and modifications of the adult tubes do not answer the problem of dealing with very small veins. I have found the following accessory to the adult apparatus of service in these cases:



Paraffined tubes of the Kimpton-Brown or Vincent type and the usual dissecting sets employed in venesection are used; the anaesthesia, novocain .5%. The veins of the elbow are employed in the case of the adult donor. The most satisfactory veins of the small recipients are, first, the external jugular; second, the me-

dian basilic or cephalic, and thirdly, the saphenous. The first mentioned vein is usually prominent, more so if the infant is crying. It is first utilized high in the neck and if it is needed later, it can be opened at a lower level. These two superficial neck veins should allow for at least six transfusions. The vein of the recipient being prepared as in the case of the donor, little trouble is encountered in making the exchange, for the infant will usually sleep through the remainder of the procedure. To the paraphernalia mentioned, I have added glass canulas made by drawing out 6 m.m. glass tubing, each resembling the glass part of a medicine dropper without the flange and varying from 3 to 5 inches in length. The lumen of the tips vary from .5 m.m. to 1.5 m.m. in diameter and are smoothed in the flame. The large end is fitted with a 3 inch piece of 1 c.m. rubber tubing having a 5 m.m. bore.

Depending on the size of the infant's vein, the proper glass canula with its attached rubber tube, both free from paraffin coating, are filled with normal saline and the tip of the glass canula slipped into the vein. The blood of the donor is carried to the recipient, the beak of the transfusion tube fitted snugly into the open end of the rubber tube and the blood pumped in. If a second tube of blood is desired, the canula and rubber tube are withdrawn, washed with saline, refilled with saline and reinserted. In this manner from 75 to 300 c.c. of fresh blood can be exchanged without clotting difficulties. The closure of vein and skin are alike in the cases of donor and recipient.

One criticism of this technique has been the fragility of the glass canulas. The exercising of a little care in the hands of those accustomed to venesection work obviates that objection.

A NEW NAIL DRILL

BY J. R. KNOWLES, M. D., BOSTON

In "Industrial Work," we have any number of men who report to us with contusions of a



finger or toe, where there is a small Hematoma formed under the nail.

Our treatment for this condition is to drill through the nail, and relieve the pressure, thus, giving the patient instant relief.

As there was not any instrument on the market to be used as a drill in such cases, I have devised one for that purpose.

I have used this drill with success in two hundred or more accident cases on the Boston & Maine Railroad, in the last two years.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 11261

MEDICAL DEPARTMENT

A New England mining engineer of thirty-seven entered March 6 complaining of polyarthritis of six years' duration, cough and edema. In his childhood he had a period of icterus and was ill in bed. At twelve he had generalized inflammatory rheumatism lasting six weeks. After it he had "heart disease"—had to limit his activities for a few years under penalty of becoming dyspneic. At sixteen he was able to play football without difficulty. He had had no other illnesses. When working in the mines he had occasional headaches which he ascribed to the powder used. He had had three attacks of gonorrhea, well treated, and without known sequelae. He had been married ten years. His wife had never been pregnant. He used alcohol to excess until his marriage. Since then he had used it moderately. He had internal hemorrhoids which had come several times during the past few years. At times they were painful and he had blood in his stools. He had noticed the hemorrhoids more during his present illness. Before this illness his best and usual weight was 200 pounds. After his attack of pneumonia six years ago it was 100. Five years ago it was 150. He had not been weighed since that time.

Six years before admission he noticed that it was difficult to stand up after sitting for a while. During the next three weeks his knees became progressively stiffer and more painful. The difficulty spread until he had trouble in putting on his coat. One morning his feet were so swollen that he could not put on his boots. Since that time he had been bedridden. Soon after taking to bed he became feverish and the stiffness, pain and swelling became generalized in all the joints. After a month with little improvement he was moved to a larger hospital, where he was found to have right lobar pneumonia. In the two months from the onset to the recovery from pneumonia he lost a hundred pounds. Until four years ago the stiffness of all the joints became progressively worse. Since that time it had not progressed much. He took considerable aspirin and salicylates in the beginning, but for two years had not taken any. His hands were the last parts to be affected.

There had not been much pain since the onset, and it was becoming less. He now had only an occasional twinge in the ankles. A few months after the onset of the arthritis all his upper and most of his lower teeth were removed. Four years before admission his tonsils were removed, although they were giving him no trouble. Streptococcus hemolyticus was isolated from them. Antistreptococcus serum was used without result. Five years before admission his knees were straightened out under ether and put in plaster casts for six weeks. He had about fifteen degrees motion before the operation, but since that had had practically none. Four years before admission while in the hospital for removal of his tonsils he had a severe attack of diarrhea with some nausea, lasting several weeks. Since that time he had had similar attacks, less severe, about twice a year. Each started with a bad taste in the mouth, discomfort, and anorexia, lasting from a few days to a week, followed by about a week of diarrhea with yellow frothy foul-smelling stools. Since the onset of the illness he had had several attacks of grippe. Six months before admission he had several attacks of dyspnea and cough. At the beginning he had little sputum, but for a period of two months raised thick greenish sputum. He gradually became hoarse and it was painful to talk. He felt as though there were a foreign substance in his throat. These conditions had subsided in the past month, although he still had a little cough and hoarseness. Four months before admission he noticed beginning edema of the ankles. This had grown progressively worse and had become generalized. He noticed that the side of his face on which he lay was swollen in the morning. His abdomen had also become swollen. For several months the skin over his legs had been chapped and cracked. Two weeks before admission he noticed that his urine was decreased in amount and dark. He had had several periods of the same oliguria previously, occurring apparently whenever he had a slight cold and lasting only a few days. He urinated once at night.

Examination showed a splendid physical specimen hopelessly wrecked, yet cheerful. There was generalized edema and ascites with limitation of motion in all the joints of the extremities. The skin and mucous membranes showed marked pallor. The skin of the abdomen and legs was scaly and dry. The remaining teeth were a few lower incisors with pyorrhea. The neck was limited in rotation to the right and slightly to the left. The thoracic wall was edematous, more on the left because he lay on the left side. There were generalized bubbling râles in both lungs. (See diagram.) The apex impulse of the heart was not seen or felt. The left border of dullness was 9 cm. from midsternum, 1 cm. outside the midclavicular line. Otherwise the heart was not remarkable. The blood

pressure was 150/80. The abdomen was edematous and showed free fluid, shifting dullness and fluid wave. Rectal examination showed hemorrhoidal tabs. The prostate was slightly large but firm and non-tender. There was marked edema of the upper arms and legs, penis and scrotum. The knee-jerks were present and equal. Other jerks were not obtainable because of ankylosis.

The temperature was normal until March 12, then 98.4° to 104°. The pulse was 80 to 109 until March 13, then 101 to 131. The respirations were normal until March 14, then 21 to 31. The

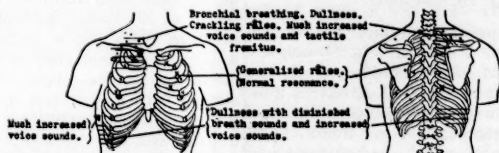
DISCUSSION

BY DR. WILLIAM H. SMITH

NOTES ON THE HISTORY

Of course we should like to know whether or not that icterus was associated with pain. A catarrhal jaundice need leave no legacy. Jaundice associated with pain suggests the possibility of infection and gall-stones.

MISS PAINTER: The record gives nothing except that he was ill enough to be in bed. There is no mention of pain.



amount of urine was normal except for an output of sixty ounces March 10. The specific gravity was 1.010 to 1.012. The urine was alkaline at one of three examinations, showed a slight trace to a large trace of albumin at two of three, 1 to 30 leucocytes at two, rare to occasional red blood corpuscles at all three. A Wassermann was negative. The renal function was 30 per cent. The hemoglobin was 50 to 60 per cent., the leucocytes 9,100 to 19,900, the polynuclears 75 per cent., the reds 4,010,000 to 3,000,000, with marked achromia. The platelets were increased. The non-protein nitrogen was 24 mgm. The sputum was thick, mucopurulent, with many intracellular diplococci and leucocytes. At one of three stool examinations the surface was streaked with blood and guaiac was very strongly positive.

Orders. March 6 salt free low protein diet, fluids limited to forty ounces. March 9 cough mixture* one dram every two hours p.r.n. March 10 sodium phosphate 3 ii in the morning. March 13 benzoin inhalation. March 14 camphor and menthol spray** every two hours to nose and throat. March 15 gomenol one capsule t.i.d., codeia gr. ss for restlessness, repeat once if necessary. March 17 codeia gr. 1/8 by mouth, later gr. ss, and morphia gr. 1/6 s.c. every three hours p.r.n. for cough or restlessness.

With the rise of temperature on the 14th there was sore throat and the cough was worse. The patient could not gargle or use a spray effectually because of arthritis of the jaw. March 15 he had a chill with no source except the respiratory infection. March 18 he died.

*Codein phosphate gr. viii, potassium citrate 3 iii, syrup of hydrochloric acid to make 3 iv.

**Camphor gr. ii, menthol gr. v, oil of eucalyptus minima v, petrolatum 3 i.

DR. SMITH: It is usually not possible to get that except from the mother. But it is important to get it as far back as we can, particularly when we are dealing with a post-infectious arthritis.

The etiology is correct for endocarditis or even adhesive pericarditis in this case. Whether or not he had difficulty in playing football would depend on how hard he played.

Probably he had one attack of gonorrhea ill-treated, with sequelae.

Is there any relation between the internal hemorrhoids and the alcoholic past,—a possible cirrhosis?

Loss of weight of a hundred pounds following any pneumonia is at once sufficient to attract our attention. It raises the question, what type of pneumonia was that? It is my custom to inquire into the onset of the pneumonia, the presence or absence of sudden onset, rigor, pleural pain, bloody sputum, a falling of the temperature at the end of five, seven or nine days as one expects with a pneumococcus pneumonia. All one can say is that something went wrong with this pneumonia. If it was a pneumococcus pneumonia it left a legacy either in the form of some hidden empyema or some other infection on top of the pneumonia, perhaps tuberculosis. Against tuberculosis is the fact that at the end of the year he had gained fifty of those pounds back.

In other words he had had an infectious arthritis, with fixations. I always remember a little girl with Still's disease in whom there was ankylosis of the joints and in whom we sought for every possible focus of pus, although we realized that the crater was burned out. At necropsy in the pelvis of one kidney was a small stone surrounded by pus; streptococcus isolated in the culture.

I do not see why the small hospital should have failed to recognize the pneumonia if the onset was at all like that of pneumococcus pneumonia. Yet when he was removed to the large hospital he was found to have a lobar pneumonia.

They were hunting for pus foci, eliminating them when found.

The operation on his knees gave an Irish dividend—fifteen degrees before operation and none after operation. Probably he could get better leverage however in his fixed position.

The record does not state whether the nausea was associated with fever or not, whether it was infectious, fermental or mechanical. There is no question that there is a direct relation in some cases of infectious arthritis with the intestinal tract, malplaced, faultily drained. I have never seen arthritis associated with the intestinal tract in a person whose weight was two hundred pounds. It usually belongs to the type of patient who is unable to manufacture weight because of faulty absorption due to the stagnant or ptosed intestine.

Dyspnea and cough again direct our attention to a possible cardiac condition—inflammatory rheumatism in youth, stated to have a heart condition following, later playing football, now with dyspnea on exertion. It may have been, of course, of pulmonary origin.

His hoarseness and difficulty in talking make one automatically think of the possibility of tuberculosis with a tuberculous larynx.

There is nothing in the examination of this patient to suggest a mediastinal involvement.

His was practically a gravity edema.

NOTES ON THE PHYSICAL EXAMINATION

The opening sentence is a good line for a novel.

In other words, there was an infectious arthritis which had sealed down with marked deformity.

If we look at the diagram, remembering that there has been a history of a pulmonary infection in this case, and if we accept the physical findings as here portrayed, we should consider tuberculosis, we should consider some chronic pulmonary condition associated with either fibrosis or bronchiectasis. There is nothing in the physical examination to suggest a concealed empyema discharging through a bronchus.

"Diminished breath sounds" and "increased voice" do not agree.

The possibilities are either a concealed empyema or bronchiectasis or tuberculosis. I cannot consider lues because I have never heard of its being apical.

We ought to pay particular attention to the heart because we have the etiological factor for cardiac disease, either endocarditis or adhesive pericarditis or both from his infectious rheumatism. There have been periods of dyspnea, although there have been periods of good health.

The apex impulse of the heart was not felt—why? Was there perchance a dilated heart, perchance a lung which overlay the heart? Did the 150 pounds weight in the man prevent, so that we have no evidence of a marked hypertrophy of the heart? That is all we can deduce from that statement. One centimeter outside does not suggest marked cardiac hypertrophy. And yet one would expect, if this patient had a chronic endocarditis, the legacy of rheumatism in childhood, that there certainly would be more than one centimeter's enlargement of the heart. If there were much pus in the right pleural cavity there certainly would be more dislocation of the heart. Is it possible that the heart was fixed by adhesive pericarditis? Certainly in that case one would expect marked hypertrophy of the heart, and one would expect more than one centimeter of enlargement. Otherwise the heart is not remarkable. In other words we practically have nothing in the heart on physical examination, yet we have every evidence in the world to point to a damaged heart.

The rise of fever, pulse, and respiration one can assume due to an acute infection, terminal.

Now when one comes to examine the urine the gravity suggests a fixation of gravity. But here again it does not breed true. If the edema were based on a nephritic background and we were dealing with a chronic nephritis, which the fixation of gravity suggests, we certainly should have more cardiac hypertrophy than one centimeter.

The blood pressure of 150 over 80 now because of the severe secondary anemia and general condition of the patient might be a terminal lowering of a previously high pressure. But when one speaks of chronic or subacute nephritis producing edema and dropsy with a fixed gravity and with 25 mm. of non-protein nitrogen and thirty per cent. renal function, it is very difficult to explain. It does not breed true.

I suppose the 19,000 leucocyte count was in association with the rise in temperature and the terminal infection.

The sputum showed diplococci; the cocci which are usually found in the sputum are pneumococci, occasionally streptococci, and in aureus septicemic cases, staphylococci, the Gram-negative micrococcus catarrhalis. No mention is made of the presence or absence of tubercle bacilli.

MISS PAINTER: They were absent.

DR. SMITH: He had internal hemorrhoids and has a perfect right to have blood in the stools.

The two usual causes of chills as I have seen them have been pneumococcus infections or infections of the kidney, pyelitis.

DIFFERENTIAL DIAGNOSIS

There are many people who are afraid not to make a diagnosis. I have not the slightest hesitation in not making a diagnosis. All I think we

can do in a given case is to balance the evidence. If it weighs a diagnosis, make it; under any other condition we are guessing and might just as well acknowledge it.

As I survey this case the striking things were jaundice in early life, rheumatism at twelve, possible heart legacy, a triple Neisser infection suggesting a chronic focus of pus, and anyone who has had any experience with the arthritic possibilities from gonorrhea would recognize at once a possibility in this case. Three attacks of gonorrhea make prostatitis or vesiculitis very likely, and I have seen the worst type of infectious arthritis with fixation following the unrecognized association of a chronic gonorrheal infection. The origin of his arthritis at thirty again suggests the possibility of a Neisserian infection. The age is correct. We have an alcoholic history plus plus. Is it possible that the ascites and the edema were manifestations of a cirrhosis? We have no evidence. He is an alcoholic. He may have cirrhosis. There is no evidence, so far as I can see, to warrant the diagnosis.

I have touched upon the pneumonia, which lasted two months with a loss of a hundred pounds,—some chronic right pulmonary infection with or without empyema, or an extensive destructive process in the lung associated with fibrosis and cavity formation. However, the pulmonary condition could not explain the arthritic condition, because the arthritic condition antedated the pulmonary.

Then follows the hunt for the foci of pus. Alveolar abscesses were probably found by X-ray and the teeth removed. Because a hemolytic streptococcus was found in the tonsils they were removed. The tonsils certainly were suspicious in this case, because of the previous attack of rheumatic fever.

The diarrhea we have no explanation for. It may have been intentional, an attempt to flush the bowel and eliminate the cause of the infectious arthritis. It may have been a stagnation, or it may have been a low-grade infection.

The recurrent gripe probably suggests an exacerbation of his chronic pulmonary infection. There is no record of examination of the larynx. We have no knowledge of whether there was a laryngitis or whether the condition was simply a manifestation of that pulmonary infection and a more or less chronic cough. Therefore we have no evidence for tuberculosis, but we cannot exclude tuberculosis, because right apical consolidation and hoarseness fit very well into a tuberculous background, and with a pneumonia which lasts two months and in which the patient loses a hundred pounds tuberculosis is a possibility. Against it is the fact that the patient regained fifty pounds after this apparently severe infection, the so-called pneumonia.

We now come to the ascites and oliguria. One would naturally look for nephritis in a condition

as here stated, and yet when we come to type the nephritis where are we led? We apparently have fixation of the gravity, 1.010 to 1.012. We have no cardiac hypertrophy demonstrable. We have no hold-back of non-protein nitrogen and we have a renal function of thirty. So the evidence of nephritis, although he may have a nephritis, is certainly not sufficient to warrant making a diagnosis of nephritis in this case.

If we come to put it on a cardiac background we have no enlargement of the heart and no murmurs.

It seems to me a diagnosis is practically impossible which will cover the entire case. If forced to make a diagnosis, the best evidence warrants a chronic pulmonary infection, probably not tuberculous; a chronic infectious arthritis with fixation, not from the lung focus; a secondary anemia; hidden pus foci probably in the genito-urinary tract; unsuspected heart lesion, probably mitral, possibly with fresh endocarditis, although against this is the fact that death occurred within one week after the onset of the last infection; possibly with old adhesive pericarditis. Against kidney is the absence of heart hypertrophy, the relatively low blood pressure, 150 over 80, the normal non-protein nitrogen, the renal function of thirty; favoring nephritis, fixation of gravity, clinical manifestations of edema. Favoring a possible cirrhosis we have the alcoholic history and the marked tendency to hemorrhoidal blood loss. If we assume a possible hidden focus of pus and a chronic pulmonary condition it is conceivable,—but we cannot make the diagnosis,—that the edema and ascites are the manifestation of amyloid degeneration.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Polyarthritis.
Chronic nephritis with edema.
Bronchopneumonia.

DR. WILLIAM H. SMITH'S DIAGNOSIS

Chronic pulmonary infection.
Chronic infectious arthritis.
Secondary anemia.
Chronic nephritis?
Cirrhosis?
Amyloid degeneration?
Chronic and acute endocarditis?
Chronic adhesive pericarditis?

ANATOMICAL DIAGNOSIS

1. Primary fatal lesions

Chronic tuberculosis of the lungs, with cavitation and anthracosis.

2. Secondary or terminal lesions

Chronic adhesive pericarditis.
Chronic polyarthritis.
Slight hypertrophy and dilatation of the heart.

Amyloid infiltration of the spleen, liver, adrenals, pancreas and kidneys.
Ascites.
Anasarca.

3. Historical landmarks

Obsolete tuberculosis of the bronchial lymph glands.
Chronic passive congestion.
Chronic pleuritis.
Slight chronic endocarditis of the aortic and mitral valves.

DR. RICHARDSON: We were not permitted to examine the head. The extremities and dependent portions of the trunk pitted on pressure.

The subcutaneous tissues were wet, the muscles pale. The peritoneal cavity contained 2500 c.c. of thin very pale fluid. There was some reddening of the mucosa of the intestines, and in the large intestine in one place there was much injection of the vessels leading to a patch of dark reddish mucosa.

The liver was at the costal border and the diaphragm on the right was at the fifth rib, on the left at the fifth interspace.

The pleural cavities were obliterated by adhesions which were wet. The trachea and bronchi showed some reddening of the mucosa and contained much brownish-red frothy fluid. The bronchial glands were enlarged, pigmented, with some fibrosis. Further examination showed obsolete tuberculosis in those glands. The pleura over the upper half of the right lung was thickened, from one to two millimeters; the pleura over the lower half was only slightly thickened. The tissue of the upper lobe was generally thickly set with minute to small blackish pigmented nodules. These were joined often by pigmented slender strands, all together forming a pigmented meshwork well marked in places. Here and there fibrous trabeculae extended into the tissue from the thickened pleura. In places in the apical region in the midst of the tissue described there were several cavities two centimeters across which contained a large amount of thin dirty brownish purulent material. Cover glasses from this material and from similar material in the other lung and other places showed many rods singly and in small groups, in general resembling tubercle bacilli, some of them rather long. They retained carbolfuchsin in the presence of Czaplewski's fluid and thirty-three and one-third per cent. nitric acid. In the region of the cavities there was some dilatation of the bronchi but nothing very marked. The tissue of the middle and lower lobes showed generally a meshwork of pigmented nodules and strands scattered through a spongy tissue showing edema in places. Here and there were small areas of fibroid induration. The pleura showed the characteristic network. The left lung showed pleura and tissue

similar to the other lung except that the cavities in the upper lobe were more numerous and a little larger. This is a good picture of the condition of tuberculosis and anthracosis found in miners' lungs.

The layers of the pericardium were generally bound together by membranous fibrous adhesions, chronic adhesive pericarditis. The heart weighed 370 grams. That is probably slightly hypertrophied for him. The myocardium was of good consistence, brown-red, negative. The right ventricle measured four millimeters, the left fourteen. Those are thick walls. The columnae carnae were well marked. The cavities on the left were full sized, on the right slightly dilated. The mitral valve measured nine and a half centimeters. The curtain of the mitral presented a moderate amount of diffuse fibrous, slightly deforming thickening, with some thickening of the chordae tendineae. The aortic valve measured six centimeters. The cusps presented a moderate amount of diffuse fibrosis with some irregular fibrous thickening of the margins,—all told a slight to moderate deformity. The tricuspid and pulmonary valves were negative. Chronic endocarditis, then, of the mitral and aortic valves and chronic adhesive pericarditis. The circulatory apparatus elsewhere was negative.

The liver weighed 1820 grams. The surfaces were smooth. The tissue generally showed a slight increase of consistence with section surfaces dark mahogany brown, mottled with a meshwork of minute to small pale brown areas. The vessels were engorged,—amyloid infiltration. The spleen weighed 300 grams and showed well marked amyloid infiltration. The adrenals showed microscopically some amyloid infiltration.

The combined weight of the kidneys was 540 grams,—considerably enlarged. The capsules stripped, but the organs, like the spleen, showed well marked amyloid infiltration.

Microscopic examination of the lungs showed areas of chronic pneumonitis and anthracosis and areas of tuberculosis.

CASE 11262

CHILDREN'S MEDICAL DEPARTMENT

AN Irish-American baby seven weeks old was sent from the Emergency Ward November 1. The complaints were vomiting and diarrhea of two days' duration. Five brothers and sisters were living and well. Three died in infancy, one with a "leaking valve" at three weeks, one with indigestion. Her mother had had three miscarriages, two just preceding the birth of the patient, the other fourteen years earlier.

The patient was normally delivered at full term and weighed eight pounds and three-quarters at birth. She was breast fed for two weeks,

then was put on a formula given at the Out-Patient Department of this hospital,—fourteen ounces of whole milk, eleven ounces boiled water, three level tablespoonfuls of dextrimaltose; also one dram of orange juice in water. For a short time this agreed with her, but she had a great deal of gas and then continued to lose. She was given another formula using Patch's sugar of milk. She gained half a pound and was better until two days before admission, though her bowels were constipated. Then she had six to nine watery yellowish stools and vomited. The diarrhea and vomiting had persisted.

Examination showed a fairly well developed and nourished baby, rather irritable and prone to cry. The head, heart and lungs were normal. No peristaltic movements or pyloric tumor were made out. The knee-jerks could not be obtained at the time of examination. The examination was otherwise negative.

The temperature was 97.3° to 101.3° with one drop to 96.3° November 18. The pulse was 111 to 175 with a rise to 200 November 22. The respirations were 25 to 90. The urine was normal at three examinations. The quantity was insufficient for a specific gravity test. The hemoglobin was 90 per cent., the leucocytes 12,800, the polynuclears 34 per cent., lymphocytes 65 per cent., mononuclears 1 per cent. The reds were 3,664,000. Two Wassermans were negative. A Schick test was negative. Tuberculin 1:100 was negative.

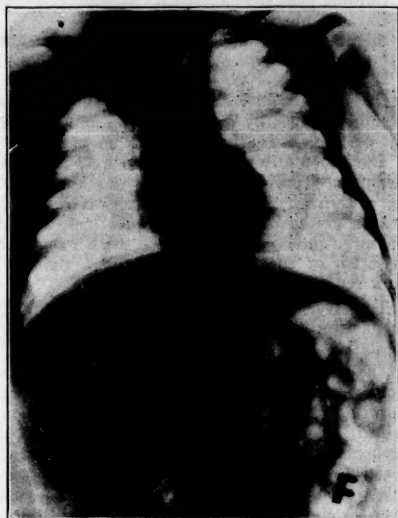
Orders: November 2 atropin sulphate 1:1000 minims xv fifteen minutes before each feeding. November 11 syrup of hydriodic acid minims x every four hours. November 14 tincture of camphorated opium minims iv p.r.n. not oftener than every four hours and not if the pupils are pinpoint or the respirations below 20. November 21 nose drops*, two to each nostril.

The child was put on lactic acid, whole milk $\frac{3}{4}$ ii, water $\frac{3}{4}$ 10; three ounce feedings. She did not have diarrhea and retained the feedings fairly well at first. By November 9 however she was having the feedings by gavage on account of regurgitation of bottle feedings. She seemed to have some spasm of the pylorus. In an attempt to relax this atropin was given before the feedings. After the first two days it was discontinued because of dryness of the mouth and pharynx, believed to be the cause of a dry irritating cough. She did not gain weight and continued to have severe spasms of coughing. A small tumor, apparently cyst-like, at the base of the right sternomastoid muscle showed best after she coughed. November 16 a barium meal showed a small amount of barium in the stomach at the end of six hours. A small amount given later by mouth revealed no definite evidence of diverticulum of the esophagus. The findings indicated no definite variation from the normal.

The child steadily lost ground. She was great-

ly exhausted by coughing attacks not relieved by any form of treatment. November 18 a throat consultant did not think bronchoscopic examination advisable. He found no apparent trouble in breathing except during spasms of coughing. The trouble seemed to him to be extrabronchial.

X-ray November 19 showed a triangular area of density, its apex pointing downward, its base



Shows a triangular area of density, its apex pointing downward, its base extending upward and somewhat to the right, partially obscuring the apex of the right lung, more suggestive of collapse of the upper lobe than of the thymus.

extending upward and somewhat to the right, partially obscuring the apex of the right lung. This was more suggestive of collapse of the upper lobe than of thymus.

The rectum prolapsed, necessitating replacement and support with adhesive bandages. By November 20 the nasopharyngitis had cleared up, but she had double otitis media. November 22 she was given 300 c.c. of normal saline subpectorally and November 25 250 c.c. She grew weaker every day. At times her lips and face appeared cyanotic and the coughing attacks were very exhausting. Her breathing was difficult, as though there was some obstruction to expiration. She grew weaker and more cyanotic and November 26 died.

DISCUSSION

BY DR. JOSEPH GARLAND

NOTES ON THE HISTORY

The sequence of the miscarriages is of no particular importance.

This is approximately the type of formula which we should expect for this age and weight,

*Iodin gr. $\frac{1}{4}$, menthol gr. $\frac{1}{4}$, camphor gr. $\frac{1}{4}$, benzoinai gr. i.

that is, roughly a minimum ration is based on the amount of protein necessary for body weight, and that generally means one and a half grams of protein per pound of body weight, which is contained roughly in one and a half ounces of whole milk. The baby at this time is somewhere between eight and nine pounds, and fourteen ounces of whole milk is perfectly satisfactory. The water was boiled, the milk not. Personally I prefer to cook the infant's food rather than cooking the water. We are sure then of approximate sterility and also we feel that boiled milk is more digestible than raw or simply pasteurized milk.

The orange juice is ordinarily given as an antiscorbutic factor. She is now seven weeks old. It is about time to start an antiscorbutic,—any time around the age of two months. The dose is rather small.

I do not feel that the change in the type of sugar is any factor in starting her gain in weight. From a practical point of view there is very little difference in the types of sugar that can be used. Lactose would appear to be the ideal type of sugar because it is contained in breast milk, but as a matter of fact combinations of dextrin and maltose and cane sugar are equally valuable, and some pediatricians even believe that lactose is less easily digested than the others, that it is more easily fermented.

We place very little importance on the absence of knee-jerks. At this age the reflexes are notoriously uncertain.

These sound like very marked variations in pulse and respiration, reaching very high levels. It is not uncommon, however, to have rises in both pulse and respiration even to this degree with very little cause.

There is nothing unusual about this blood examination for infancy. 12,000 leucocytes is within normal limits, and a relative leucocytosis is almost the rule at this age. The red count is perhaps a little lower than we should expect even at this age, although there is apt to be a drop in the red count within a few weeks after birth, and we know that this baby had had some nutritional trouble, which is apt to force the red count down.

Probably the only reliable tuberculin test is the intradermal or Mantoux test, and this should be done with varying dilutions, starting with 1 to 1000, and if it is negative 1 to 100 can be used. Starting with a stronger solution, if it is positive, may give us a local slough.

The gavage was undoubtedly on account of the vomiting, the idea being to relax spasm.

Apparently this child had some sort of respiratory infection with cough requiring an expectorant. The paregoric leads us to suppose that the cough was continuing and was irritating.

We do not know how many feedings were given during the twenty-four hours.

Lactic acid milk need not be diluted. This was diluted half and half. It is generally well borne undiluted, and with vomiting, with difficulty in getting enough food in and keeping it down, it seems rational to give a concentrated rather than a dilute feeding.

X-ray shows a very dense area. There are fewer markings in these lungs than there would be in an adult lung. It is possible that this might be due to collapse, but I think not. At about this level the normal lung markings between the lungs seem to cease and there is apparently an area of decreased density in here without markings, which suggests that possibly the upper lobe is collapsed. Whenever there is any type of obstruction in the chest or bronchi or about the trachea or esophagus noted in small infants the thymus has always to be considered as a possible cause, although ordinarily a large thymus causing obstruction is more likely to cause a continuous definitely respiratory obstruction rather than offering any obstruction to deglutition, and it is unusual to have a thymus exerting enough pressure on the trachea or larynx to cause a cough.

Otitis media is a frequent hospital sequence of events.

DIFFERENTIAL DIAGNOSIS

The original complaint with which this patient entered the hospital was vomiting and diarrhea. Where the feeding has been of an approximately normal type an intestinal upset with acute onset like this is more likely to be due to enteric or parenteral infection than to any other cause. She entered November 1 and shortly after that, within a week probably, she did show evidences of an acute respiratory infection. We do not know whether she had it on admission or not. November is a season when respiratory infections are apt to occur, and that is the most frequent cause for this type of intestinal upset.

What we do want to know is what caused this tumor occurring with respiration at the base of the right sternomastoid muscle, also the cause for this type of cough, which seems to be rather the cough of mechanical pressure than simple infection alone. We also want to know why the vomiting was so persistent, necessitating food by gavage. That might have been on account of the infection and the reflex pneumogastric irritation.

We have to consider several things. It is not an easy case to make a snap diagnosis on. (1) The possibility of thymus, which does not show in the X-ray plate. The thymus does not always show. (2) We have to think of a branchial cyst causing this tumor that apparently fills with respiration. (3) We might also consider a rupture of the lung from spasm of coughing with escape of air into the pleural cavity, which is finding its way out into the cervical tissues. (4)

A retropharyngeal abscess might cause pressure and cough and difficulty in swallowing. (5) Mediastinal glands pressing on the trachea may cause a severe cough which cannot be alleviated by ordinary methods, and may also exert enough pressure on the esophagus to cause difficulty in swallowing. Following respiratory infections it is not uncommon for infants to develop a considerable enlargement of bronchial glands. That is particularly noticeable with such infectious diseases as whooping cough. We cannot tell here whether there are such or not on the left side of the chest. The hilum looks pretty clear. On the right side on account of the possibly collapsed lung it is more difficult to tell.

The vomiting is probably caused by a pyloric spasm, simply a reflex irritation of the vagus nerve causing a chronic spasm of the pylorus and stomach.

(6) A foreign body must also be considered, although it is difficult to tell exactly what type of foreign body might be lodged there in an infant of this age, and a foreign body of a type that would cast no X-ray shadow. Infants even of this age may occasionally get hold of unusual objects which may get into the mouth, although the tendency is not so great at this age as it would be later. In older children arachidic bronchopneumonia due to peanuts is quite common, as Jackson pointed out.

This child died I believe of her acute infection, a double otitis media, and a reflex gastro-intestinal disturbance causing a severe degree of malnutrition. I have nothing more to offer as solutions of the respiratory obstruction than the rather small list I have mentioned.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Marasmus.
Nasopharyngitis.
Otitis media.

DR. JOSEPH GARLAND'S DIAGNOSIS

Acute respiratory infection.
Double otitis media.
Reflex gastro-intestinal disturbance.
Malnutrition.

ANATOMICAL DIAGNOSIS

Bronchopneumonia and abscesses of the lungs.
Fibrinopurulent pleuritis.

DR. RICHARDSON: We were not permitted to examine the head in this case. The peritoneal cavity and the gastro-intestinal tract were frankly negative.

In the lower part of each pleural cavity was a small collection of purulent material, pus. The thymus was small, negative. The trachea and bronchi contained a small amount of mucopurulent material. The bronchial glands were negative. The bases of the lungs were negative,

but in the posterior portions of the upper lobes the tissue was dark red, a little leathery, with here and there areas of bronchopneumonia. Away from the upper lobes the tissue was punky and spongy except at the base of the lower lobes in the region of the collection of pus, where there were several small frank abscesses on each side.

Culture from the pus in the abscesses showed streptococci and staphylococci.

CASE 11263

SURGICAL DEPARTMENT

A German machinist of twenty-four entered March 16 complaining of pain in the right buttock and malaise. The history of his health before the present illness is unimportant. He had had no serious illnesses. Two weeks before admission he noticed pain and tenderness in his buttock. This had gradually increased in intensity until his admission to the hospital. March 11 he had a definite rigor. Since that time he had been in bed, prostrated, with fever and malaise, and an average of two severe chills daily lasting about an hour. For three days beginning March 11 he vomited twice daily. March 13 he had periumbilical pain, not severe. March 15 he noticed that his right testicle was tender.

Examination showed a fairly well developed and nourished man breathing rapidly (rate 36) and looking toxic. There was slight cyanosis of the face and hands. Over the upper thorax posteriorly was a profuse papular rash. The examination showed no other abnormalities except an indurated tender red swelling on the right buttock about 15 centimeters in diameter with a fluctuant center. The induration and tenderness extended anteriorly along the perineum as far as the right testis. The right epididymis was very tender.

The temperature was 103.2°, the pulse 130, the leucocyte count 15,000. A blood culture was sterile.

The day of admission operation was done. The following day the patient appeared septic and was put on the dangerous list. There was tenderness in the right upper quadrant and the left lower quadrant of the abdomen. The scrotum was swollen. On the 19th he was definitely jaundiced. The abdomen was more tender, painful and rigid than ever. Chest examination was negative. There was profuse drainage from the wound, with bright blood. March 20 the coagulation time was 15½ to 31½ minutes. 500 c.c. of whole blood was given by surgical transfusion and he was started upon 10 c.c. of 5 per cent. calcium chlorid twice a day. That night he felt better. The coagulation time was 6 to 7 minutes, the bleeding time two minutes. Another blood culture was negative. Two days later the calcium chlorid was

discontinued, as the bleeding had stopped. The patient was probably a little worse. On the 23rd the hemoglobin was 65 per cent., the red count 2,650,000, the white count 5,000. The bleeding time was $4\frac{1}{2}$ minutes, the coagulation time $10\frac{1}{2}$ to $16\frac{1}{2}$ minutes. 250 c.c. of blood was transfused surgically.

March 24 the right groin was found to be slightly red, indurated and very tender, though there was no definite fluctuation or abscess. The serotum was found to be breaking down. Some of the slough was removed through the opening.

That day an operation was done under gas on the ward. In the evening 23 c.c. of 1 per cent. solution of mercurochrome was given intravenously with no immediate reaction. Next day the abdomen was still very tender throughout. There were râles at the left base. The patient was incontinent of urine and feces all the time and delirious much of the time. He lay quietly and complained of no pain. March 26 he was given 76 c.c. of one-half per cent. solution of mercurochrome intravenously. He was on the verge of a chill when this was given. After it he had frequent chills. March 27 the hemoglobin was 80 per cent., the red count was 2,370,000, the white count 15,400. Bedsores developed. The induration spread over the pubis. Both the wounds looked necrotic. On the 29th he was again given 76 c.c. of one-half per cent. solution of mercurochrome. There was no immediate reaction. Another blood culture was negative. The evening of the 31st he became markedly worse, with gasping difficult respiration. There was ecchymosis of the left flank. That evening he died.

DISCUSSION

BY DR. EDWARD L. YOUNG, JR.

As we read it here, this is a picture of severe sepsis. This, so far as we can tell, has come on without any other primary focus. It very often happens that an abscess of this kind is secondary to sepsis somewhere else, either disseminated from an acute tonsillitis or from a slight infected scratch or injury of the lower leg or thigh. We are not given any story that such was the case here, and of course it is true that sepsis will start anywhere, so far as we can tell out of a clear sky.

The examination as well as the story bears out the suggestion of a severe generalized sepsis.

The fact that the blood culture was sterile does not necessarily prove that there is not a septicemia present, because blood cultures can be sterile either because the number of bacteria in the blood varies at different times or for some error in technique.

The first thing to do is to give the primary focus drainage, always when that can be done without adding to the risk to the patient. This

has been going on for two weeks, and it is very close to the surface. His general resistance has not got to be lowered by a severe shocking operation. It is merely the incision and drainage of that area, and then meet other conditions as they come. That was done immediately on admission.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Septicemia.
Perineal abscess.

PRE-OPERATIVE DIAGNOSIS MARCH 16

Ischiorectal and periurethral abscess.

FIRST OPERATION

Gas and oxygen. A two and a half inch radial incision was made from the external sphincter horizontally across the left ischiorectal fossa with liberation of a considerable amount of thin reddish-yellow pus. Another radiating incision was made above this. The abscess was found to continue upward and forward. A third incision was then made lateral to and parallel with the bulbous portion of the urethra. The infection here had broken across the midline over the bulb superficially, extending into the right side. On the right another similar incision was then made. All the incisions were packed wide open with boric ointment wicks and a dry gauze dressing was applied.

A blood culture taken before the operation was started showed no growth.

FURTHER DISCUSSION

"Appeared septic" I think is a perfectly fair description. We have criticized "uremic odor" and "cholemic odor" but to say that the patient "appeared septic" I think is a fair statement.

The serotum infection is apparently lymphatic, spread to the epididymis from the infection which has already spread to the peritoneum. Whether or not the tenderness in the right upper quadrant means beginning infection of the liver I think it is hard to say. They do not say the liver is enlarged. Tenderness in the left lower quadrant I think we cannot explain accurately on that mere statement, but two days later he was jaundiced, and that makes us think that the tenderness in the right upper quadrant may well have meant the spreading of infection to the liver, and that of itself gives a poor outlook.

The condition of the abdomen may well mean that metastatic peritonitis has started.

There should not be bright blood from the mere incision of an abscess cavity which is two weeks old, unless some vessel was cut which was not secured. So they very properly examined the blood to see if the sepsis had damaged the

blood, and found that coagulation time was prolonged.

The question of transfusion in sepsis I think is to be put on the basis of the general condition of the patient. There is no miraculous cure of sepsis in transfusion, but if a patient is so lowered in general condition because of the sepsis that his power of combatting the sepsis is thereby diminished, and it is a reasonable belief that the transfusion will improve his general condition by increasing the hemoglobin, the number of red blood corpuscles, and give him the stimulus that transfusion does to a patient who is anemic, it is then indicated, not as a direct blow at the sepsis but as a method of giving the patient additional strength whereby to fight the sepsis. Here there are two indications,—he has an anemia, and he has also a lengthened coagulation time, so that it was definitely indicated. By the end of the day it had already made a material reduction in the coagulation time.

PRE-OPERATIVE DIAGNOSIS MARCH 24

Suppurating lymphangitis of right groin and right scrotum.

SECOND OPERATION

Under gas and oxygen an incision was made into the right scrotal sac and one in the right groin. The testis appeared to be intact, but superficially the tunica was necrotic. A great deal of black, necrotic tissue was removed from the right scrotal sac. In the groin there was a large amount of brawny, edematous tissue from which very purulent fluid exuded freely. The incisions were packed wide open with gauze.

FURTHER DISCUSSION

Unless he was a very light man this is less than the full dose of five milligrams of mercurochrome per kilogram of weight. But on the basis of the severe reactions which some have had and the relatively slight evidence that we have that it is a cure-all I assume they gave that dosage. He did not have any reaction. On the 26th I assume they gave the full dose estimated on the basis of his weight. So far as the use of mercurochrome went this case seems to fall into the vast majority of cases where there was no reaction, in spite of many cases reported where following the use of it there was recovery. The *post hoc propter hoc* argument has no more accuracy here than in logic.

I shall be interested to know just where Dr. Richardson will find the infection. Does it say whether it was staphylococcus or streptococcus? Did they take a culture?

A HOUSE OFFICER: Culture was not taken. It was thought that it would be contaminated by the fecal material.

DR. YOUNG: Perhaps we can tell as we go

on, because as we have noticed here, the spot of infection from staphylococcus is different from that of streptococcus.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Ischiorectal abscess.
Cellulitis of abdominal wall.
Necrosis of scrotum and testicle.
Liver abscess.
Pneumonia.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Perineal abscess.
Peritonitis.
Necrosis of testicle.
Septicemia.

ANATOMICAL DIAGNOSIS

1. Primary fatal lesions

(Ischiorectal and periurethral abscess.)
Extensive necrosis of the abdominal wall, scrotum and pelvic retroperitoneal tissues, with purulent infiltration.

2. Secondary or terminal lesions

Abscesses of the lungs.
Icterus.
Soft hyperplastic spleen.
Area of necrosis of wall of bladder and urethra.
Patches of fibrinopurulent pleuritis.

3. Historical landmarks

Slight chronic pleuritis, right.
Meckel's diverticulum.

DR. RICHARDSON: The conjunctivae and the skin were chrome yellow. In the region of the anterior abdominal wall and scrotum there was an area of necrosis and purulent infiltration extending into the retroperitoneal tissues, well marked down along the sides of the pelvis and very extensive in the region of the scrotum. The lower end of the rectum was in association with this area of necrosis and showed necrosis of its wall in that region. The intestines were otherwise negative. There was no definite peritonitis.

The lung showed scattered abscesses, some just beneath the pleura. Over these the pleura showed purulent exudate. The heart was negative. The liver except for bile staining was negative. The gall-bladder, bile ducts, pancreas, were negative. The spleen was considerably enlarged, the tissue purplish brown-red, mushy,—a soft hyperplastic spleen. The kidneys were rather large, bile-stained, and showed no definite lesions. The mucosa of the urinary bladder was bile-stained and presented in the region of the trigonum extending down a short distance into the urethra a small streak-like area of necrosis. The necrosis was so exten-

sive in the region of the scrotum that the anterior wall had disappeared.

Sections from the region of the necrosis, especially where it was in relation with the rectum, showed no evidence of tuberculosis. Every time a culture was taken in life—three different times—it was negative. Were all those times after the mercurochrome?

DR. YOUNG: No; only one. It was taken twice before mercurochrome had ever been given.

CURRENT LITERATURE

ABSTRACTORS

| | |
|---------------------|-------------------------|
| GERARDO M. BALBONI | TRACY MALLORY |
| WILLIAM B. BREED | HERMAN A. OSGOOD |
| LAURENCE D. CHAPIN | FRANCIS W. PALFREY |
| AUSTIN W. CHEEVER | EDWARD H. RISLEY |
| RANDALL CLIFFORD | GEORGE C. SHATTUCK |
| ERNEST M. DALAND | WILLIAM H. SHEDDEN |
| HORACE GRAY | WARREN R. Sisson |
| ROBERT M. GREEN | JOHN B. SWIFT, JR. |
| JOHN B. HAWES, 2ND | GEORGE G. SMITH |
| JOHN S. HODGSON | W. T. SHERMAN THORNDIKE |
| FRED S. HOPKINS | WILDER TILSTON |
| CHESTER M. JONES | HENRY R. VIETS |
| CHARLES D. LAWRENCE | SHIELDS WARREN |
| BRYANT D. WETHERELL | |

POLYPOSIS OF THE COLON

ERDMANN, J. F., and MORRIS, J. H. (*Surg., Gyn. and Obst.*, Apr., 1925), present a survey of this subject and draw the following conclusions:

1. For purposes of standardization, it is suggested that the term "polyposis of the colon" be limited to designate an adenomatous hyperplasia of the intestinal mucous membrane as opposed to those polypoid tumors of the intestine which are histologically fibromata, myomata, etc.

2. Polyposis of the colon appears to be a uniform, non-specific mucous membrane reaction, variable only in degree to a chronic irritant in the presence of a preternaturally sensitive mucous membrane.

3. It is manifested grossly as scattered intraluminary tumors varying in size from a split pea to a grapefruit and has a specific predilection for the large gut and rectum, which predilection increases in direct proportion as we proceed from the ileocecal valve.

4. Two clinical types may be distinguished:

a. The adolescent variety, signaling itself in early youth by chronic, recurring attacks of intestinal hemorrhage and diarrhea and showing a distinct tendency to involve members of the same family.

b. An acquired variety first appearing in adult life in association with frank evidences of chronic traumatic and inflammatory lesions to which they are evidently secondary.

5. The two types have in common (a) the marked predilection for the large gut, (b) a malignancy incidence of more than 40 per cent. and a tendency to chronic intestinal hemorrhage and diarrhea. They are dissimilar in that the one (adolescent) is widely disseminated, appears in almost countless numbers and shows no gross evidence of a causative lesion; while the other (adult) occurs in limited numbers and extent, with, almost invariably, associated gross evidence of trauma, inflammation, or foreign body. The one is essentially a disease of early life, while the other occurs in middle or late life, the cumula-

tive result of prolonged irritation incident to years of functional activity of the gut.

6. In the presence of persistent and unexplained rectal bleeding and dysentery in early life, suspicion should be aroused of the existence of the adolescent form of polyposis of the colon; in adults, although a relatively less frequent cause, its consideration should not be neglected in a differential diagnosis of an obscure case of bleeding and dysentery.

7. Indications for treatment are the depleting hemorrhage and diarrhea and the high malignancy incidence. Non-radical, palliative treatment comprises caecostomy, appendicostomy, irrigations, and radium therapy. Radical, effective treatment, excision of the polyp bearing area, is limited by technical difficulties and the inability to predict, preoperatively, the extent of the process.

[E. H. R.]

PITUITARY OBESITY IN ADOLESCENCE

HILL, H. G., JONES, I., and SMITH, J. F. (*Quar. Jour. of Med.*, Apr., 1925), present a study of 60 cases. The pituitary origin of the obesity was shown by the following facts: The sella turcica was abnormally small, a period of accelerated skeletal growth coincided with the onset of obesity, disturbances of sexual functions were present, the carbohydrate and basal metabolisms were affected.

The obesity in the early stages followed the pituitary type, with special involvement of the mammae and pubic regions; in the later stages the fat was more evenly distributed. It dated from birth in about one-third of the cases. Very frequently it began after an acute infection, possibly as a result of a toxic factor.

None of the cases presented evidence of pituitary tumor. The X-ray findings were interesting, no less than 60 per cent. showing an abnormally small sella.

With regard to growth, the younger patients were above the average in height, while the older ones were normal in stature. X-ray examination showed the bones larger and denser than normal, with premature union of the epiphyses. To summarize, there is an early period of accelerated growth which ceases at the age of puberty.

With regard to the genital functions, the same evidence is seen of early anterior lobe hyperactivity followed by a period of decreased activity. Menstruation set in at an earlier age than normal and tended to be abundant at first, but later on in 60 per cent. delayed or scanty menstruation or periods of amenorrhea occurred.

The basal metabolism was below normal in 68 per cent.; no case of increased metabolism was recorded. Carbohydrate metabolism was also abnormal; in the early cases sugar tolerance was somewhat decreased; in the later ones it was markedly increased, the blood sugar showing very little rise after the administration of 50 gms. of glucose. This increased power to deal with sugar was not due to increased oxidation, for the respiratory quotient failed to rise after taking glucose (in the normal it rises to 90).

Treatment. The results of treatment proved very satisfactory; by the combined use of thyroid and whole gland pituitary extracts marked losses in weight were achieved, with improvement in the general condition. It was necessary, however, to continue the administration indefinitely; as soon as it was omitted the weight began to rise. The authors began with small doses, one-half grain of each every night, gradually increased until 5 grains or more of each extract were taken three times a day. After several months treatment was omitted for a month, and then resumed. It was found that the intervals between treatments could be gradually lengthened and the dosage decreased. The basal metabolism rose as a result of treatment and the carbohydrate metabolism became more normal.

[W. T.]

MANAGEMENT OF INTRACRANIAL INJURIES WITH OR
WITHOUT FRACTURE

CONNORS, J. F. (*Ann. of Surg.*, May, 1925), presents a short but very instructive article based on the analysis of 497 cases. These are divided into two periods: Those cases from 1914-1917 are classed as those done in the operative period; those done from 1918-1924 as those done in the conservative period.

In the conservative period, 130 cases recovered without operation, while only 68 cases recovered after operation in the first period. The author believes that this large number of recoveries without operation is a good indication for conservatism in the treatment of fractured skulls in general.

The author speaks pointedly of the condition of laceration of the meningeal artery. It has numerous branches. The posterior branch is the one most commonly lacerated. There is always a dilated pupil on the side of the hemorrhage.

The author believes that if one fails to find a clot beneath a fracture communicating with the suture, the suture alone should be considered a part of the fracture, and, if followed up, the clot will eventually be found. He instances three cases in which the operator failed to do this and later at autopsy clot was revealed beneath the suture line.

In the management of intracranial injuries his plan is as follows: The head of the bed is elevated, an ice cap is applied, records of pulse, respiration and blood pressure are taken frequently and recorded, iodine is applied to the nose and ears, a 10 per cent. solution of argyrol is dropped into the eyes, six ounces of a 50 per cent. magnesium sulphate solution in the form of a retention enema is given every six hours, a spinal tap is done, mouth hygiene is rigidly carried out, the position of the patient is frequently changed. A consultation with the neurologist is held to determine the advisability of operation. The scalp is shaved and the exact location of hematomas is noted. Nourishment is sustained by the use of rectal feedings.

In conclusion, the author states:

1. No case of intracranial injury should be operated upon until definite localization of the brain injury has been determined.

2. If an operation is to be performed it should expose the brain laceration, remove the compressing substance and control hemorrhage.

3. The subtemporal decompression operation as a routine measure fails in the majority of cases because it does not expose the lacerated brain, remove the compressing substance or check the hemorrhage.

4. In view of the fact that such an operation has not yet been demonstrated, palliative treatment is recommended in cases of contre-coup laceration of the brain.

[E. H. R.]

TUBERCULOMA OF THE CAECUM

HERRICK, F. C. (*Ann. of Surg.*, Apr., 1925), presents a rather extensive review of this subject and draws the following conclusions:

1. There occasionally occurs in tuberculous patients a tuberculous process localized chiefly in the caecum or colon and characterized by a predominance of scar tissue and round-cell infiltration to a degree closely simulating new growth.

2. This process has been called hyperplastic tuberculosis, but recently authors agree on the term tuberculoma as more descriptive.

3. It is apparently noted more commonly in the pathological than the surgical departments.

4. By causing chronic incomplete ileus this condition may produce a major handicap in the recovery from pulmonary tuberculosis.

5. The chief errors, both in preoperative and operative diagnosis, are calling it appendicitis in young adults or cancer in middle or later life.

6. Incomplete or complete ileus may furnish the first definite symptoms.

7. In several classical cases and some reported more recently, histological differentiation was difficult or impossible.

8. Treatment: (a) In young adults simple exploratory operation or an exclusion anastomosis has been followed by excellent results. (b) Resection is preferable in good surgical risks. (c) In an old patient where differentiation from cancer can be made, an exclusion anastomosis is preferable.

"The author is indebted to Dr. C. A. Hamman of Cleveland for the privilege of including two cases in this report and for bibliographic assistance; also to Dr. H. T. Karsner of Cleveland for the assistance of his Department of Pathology at Cleveland City Hospital and for suggestions in bibliography."

[E. H. R.]

DOCTOR TOBIAS SMOLLETT

The portrait of Doctor Tobias Smollett adorns the front cover page of the *Annals of Medical History* for March, 1925, and signalizes Dr. Drinker's admirable article on Smollett which occupies this issue. The author's chief interest is naturally in the medical aspects of his life as reflected in his novels. Perhaps, however, he is oversensitive in his estimate of the broadness of some of Smollett's writing, in view of the robust virility and frankness which characterized his century. After all, it is not as a physician but as a novelist that Smollett will be remembered. Carlyle, in his "History of Frederick the Great" (Book XII, Chapter XII), appraised more accurately the true significance of his compatriot's career:

"Most obscure among the other items in that Armada of Sir Chaloner just taking leave of England; most obscure of the items then, but now most noticeable, is a young surgeon's mate—one Tobias Smollett, looking over the waters there and the fading coast. A proud, soft-hearted, though somewhat stern-visaged, caustic and indignant young gentleman. Apt to be caustic in speech, having sorrows of his own under lock and key, on this and subsequent occasions. Excellent Tobias; he has, little as he hopes it, something considerable by way of mission in this Expedition and in the Universe generally. Mission to take Portraiture of English Seamanhood with the due grimness, due fidelity; and convey the same to remote generations before it vanish. Courage, my young brave Tobias. Through endless sorrows, contradictions, toils and confusion, you will do your errand in some measure; and that will be something."

Dr. Drinker's text and well selected illustrations and quotations show how Smollett did carry out this errand, in spite of his failures as a physician. And it is for this success that we as physicians cherish his memory, even more than for the fact that he was a fellow practitioner.

[R. M. G.]

RELATION OF INFECTION TO DIABETIC COMA

GRAHAM, G. (*Quar. Jour. of Med.*, Apr., 1925), emphasizes the importance of infection in the production of diabetic coma. In seven out of nine cases of coma observed by him an infectious etiology was discovered. In several of these, fever and evidence of infection did not show themselves until after the coma had been relieved by insulin; he points out that in pre-insulin days death would have occurred before the infection became evident. An interesting phenomenon was the much greater doses of insulin required to reduce the blood sugar in the cases with infection than in the two cases without infection. It is evident that bacterial infection reduces the sugar tolerance in diabetes, a fact to which attention has been called by J. P. Peters in this country.

[W. T.]

NEW THORACOPLASTIC PROCEDURE FOR PULMONARY
TUBERCULOSIS

ALEXANDER, JOHN (*Ann. of Surg.*, Apr., 1925), describes a procedure undertaken to lessen the incidence of postoperative pneumonia. Postoperative pneumonia, tuberculous pneumonia, is extremely common, the percentage being almost as high as 80 per cent. The author advises the performance of a preliminary phrenicotomy in order to limit the aspiration of the diaphragm and the amount of the action of the lung on the affected side. He draws the following conclusions:

"The high incidence of tuberculous pneumonia following resection of the lower ribs is due principally to impairment of the function of expectoration. Substitution of radical phrenicotomy for resection of the lower ribs, as the first operation to be performed, will probably lessen the danger of post-operative pneumonia as well as reduce the frequency with which fresh small tuberculous lesions develop in the unoperated lung.

"In cases in which there is little or no clinical tuberculosis in the lower lung and in which the diaphragm rises well into the chest after phrenicotomy, resection of only the upper seven ribs has, in my opinion, important advantages over the one-stage or two-stage thoracoplasty of ribs XI to I, which is now in general use. The combination of radical phrenicotomy and secondary resection of the upper seven ribs is worthy of extensive trial in such cases. When the lower lung contains more than a few tuberculous lesions, or when the diaphragm rises only a little into the chest after phrenicotomy, the lower ribs should be resected as the third stage of the operation."

[E. H. R.]

THE EFFECT OF IODINE ON EXOPHTHALMIC GOITER

JACKSON, A. S. (*Ann. of Surg.*, Apr., 1925), reports his study of seven cases treated with Lugol's solution, which is an aqueous solution of 5 per cent. iodine and 10 per cent. potassium iodide. The patients under this form of treatment have been required to be under the strictest of hospital observation at first, but it was later found that many of them did so well that the preliminary treatment with iodine could be commenced at home and the hospital stay thus greatly shortened. The basal metabolism rate has been greatly reduced and the exophthalmos lessened and the patient's general condition greatly improved. The pulse rate falls coincident with the metabolic rate. Most remarkable of all is the effect of Lugol's solution on patients who are seen for the first time in a crisis. The operative risk is correspondingly reduced. This article is of interest and practical value.

[E. H. R.]

DRAINAGE OF THE THORACIC DUCT IN PERITONITIS

McGUIRE, L. D. (*Surg., Gyn. and Obst.*, May, 1925). This article is experimental in nature to determine the value of thoracic duct drainage in peritonitis. The author draws the following conclusions:

1. Bacillus prodigiosus, injected intraperitoneally in cases of experimentally produced peritonitis, could not be recovered from lymph from the thoracic duct.
2. Lymph from the thoracic duct in cases of peritonitis in dogs did not appear highly toxic, comparatively large amounts producing no effect when injected intravenously in rabbits.
3. Dogs with experimentally produced peritonitis were not benefited by drainage of the thoracic duct. All of them died.
4. Much experimental work must still be done before surgeons may perform with confidence lymphaticostomy in cases of peritonitis.

[E. H. R.]

SPINAL FLUID SUGAR IN ENCEPHALITIS

HOLLIDAY (*Quar. Jour. of Med.*, Apr., 1925), has made a thorough study of this subject, on which conflicting statements are made in the literature. He was unable to confirm the findings of other authors that the spinal fluid sugar is increased in this disease. These findings he attributes to faulty technique, in that the influence of food was not eliminated. He found that the fasting values for fluid sugar were always within normal limits, averaging 56 milligrams per 100 c.c., with variations from 42 to 70 mg. The fluid sugar was always less than the fasting blood sugar, averaging 59 per cent. of the latter. Serial estimations of the fluid sugar after the administration of 50 gm. of glucose showed a definite curve, the sugar rising to a moderate degree, but later than the blood sugar, so that the highest values were obtained at a time when the blood sugar curve had fallen. This delay in the rise accounts for the cases in the literature where the spinal fluid sugar has exceeded the blood sugar, taken simultaneously, though in Holliday's series the former never quite equalled the latter.

The fasting blood sugar in encephalitis was within normal limits, though the curve after glucose often showed a hyperglycemia; this is of no diagnostic value, being met with in many acute infections of all sorts.

It is obvious that estimations of spinal fluid sugar are of little value unless taken after a twelve hours' fast and compared with the fasting blood sugar figure. In encephalitis the fluid sugar is of little diagnostic value (except in differentiating from tuberculous meningitis, where the fluid sugar is usually decreased).

[W. T.]

GASTRIC TETANY: A FATAL CASE

BUSCH, I. (*Surg., Gyn. and Obst.*, May, 1925), discusses mainly pathology, symptomatology and diagnosis, especially in those cases in which there is obstruction present, and draws the following conclusions:

1. Gastric tetany is an infrequent condition and is fatal if not treated early and properly.
2. It is preceded by an obstruction at the pylorus, usually of a benign character, e. g., ulcer.
3. An increased carbon dioxide combining capacity of the blood plasma ranging from 80 to 100 per cent. preceded the onset of the tetanic spasms.
4. The obstruction should be relieved by a gastro-enterostomy before the manifestations of tetany appear, thus preventing an extremely dangerous complication.
5. If tetany ensues, gastro-enterostomy is the treatment of choice.

[E. H. R.]

PRODROMAL STAGE OF PERNICIOUS ANEMIA

WEINBERG of Mannheim reports (*Munch. med. Woch.*, January 30, 1925) from Martins' clinic at Rostock on the prodromal and early stages of pernicious anemia, without considering the probability of its being syphilitic.

[R. M. G.]

RETROGRADE PERISTALSIS

SCHÖNBAUER, from Eiselsberg's clinic at Vienna, reports (*Wien. klin. Woch.*, January 3, 1925) a case of invagination of a carcinoma of the cecum as an example of retroperistalsis which he believes can be combated by atropin in postoperative vomiting and ileus.

[R. M. G.]

DRAINAGE OF THE THORACIC DUCT IN EXPERIMENTAL
PERITONITIS

COX, H. H., and BELL, L. B. (*Ann. of Surg.*, May, 1925), present a paper based on experimental work and draw the following conclusions:

"We must remember that many cases of peritonitis will recover spontaneously.

"In our hands drainage of the thoracic duct is by no means a simple procedure, and, in view of the literature, we cannot believe it to be without danger.

"We were unable to bring about a uniformly fatal peritonitis and so could not find a lethal standard.

"Drainage of the thoracic duct did not prolong the lives of the animals, but appeared to hasten death. Ligation of the duct without drainage seemed to prolong the lives of the dogs.

"The work of Costain has opened a large field of possibility. The importance which this procedure might have in the treatment of septic peritonitis cannot be overestimated. However, it would appear from our work that lymphaticostomy in the treatment of peritonitis should not be undertaken lightly. It would seem that further work of an experimental nature is needed before this procedure can be universally adopted.

"We were able to carry out several experiments relative to absorption from the peritoneal cavity. Suspended carmen particles and methylene blue were injected into the free peritoneal cavity and in two cases appeared in the chyle from the thoracic duct within five minutes. In two other instances it did not appear within 45 minutes. The results indicate that the rate of absorption through the thoracic duct is by no means constant."

[E. H. R.]

SOME OBSERVATIONS ON THE CONDITION SOMETIMES
CALLED LEATHER-BOTTLE STOMACH

WYARD, S. (*Surg., Gyn. and Obst.*, Apr., 1925), discusses the various pathological conditions commonly described as leather-bottle stomach. Those most commonly spoken of as such are either fibromatosis, either local or diffuse, and either local or diffuse carcinoma of the stomach. The author claims that there is no definite evidence that the etiology is syphilitic or tubercular in nature. The symptoms are those most closely resembling carcinoma, and the pre-operative diagnosis will probably always be carcinoma, as there is no means at present of distinguishing the two conditions except by laparotomy and by microscopic examination. The disease untreated is inevitably fatal. The pyloric stenosis is progressive. Pylorotomy with end-to-end anastomosis or posterior gastroenterostomy is the ideal operation. The author believes that leather-bottle stomach is neither a clinical nor a pathological entity, and that the name should be abandoned as serving no useful purpose. The terms diffuse fibromatosis or diffuse carcinosarcoma are suitable names to apply to the condition.

[E. H. R.]

TREATMENT OF GASTRIC ULCER IN RELATION TO CANCER

FINSTERER (*Wien. klin. Woch.*, Mar. 12-19, 1925) reviews the entire question of the relation of gastric cancer to ulcer, with reference to the bearing of the former on the indications for treatment of the latter.

[R. M. G.]

NITRITOID REACTION AFTER PHLOGETAN APPLICATION

ST. AFRETOUR and LUNBOVA, from Tryb's skin clinic at Brünn, report (*Wien. klin. Woch.*, Apr. 2, 1925) their studies of the so-called nitritoid reaction. They find that the angioneurotic symptom complex may appear after the application of phlogetan, and that it can be relieved by adrenalin.

[R. M. G.]

SPLENIC BLOOD DISORDERS

HANRAHAN, E. M., JR. (*Ann. of Surg.*, May, 1925), presents a surgical classification with reference to splenectomy and draws the following conclusions:

1. The spleen undoubtedly plays an important part in the hemolytotoxic system, but its action and function are entirely unknown. Because of this, the indications for splenectomy are poorly defined.

2. Since it is impossible to make an etiologic classification of those blood disorders characterized by more or less splenomegaly, anemia or polycythemia, with or without jaundice, a surgical classification based on end-results is attempted.

3. These disorders may be classified surgically into three groups:

Group 1. Splenectomy is definitely indicated in purpura hemorrhagica, the slow chronic forms of familial hemolytic jaundice, and the early forms of splenic anemia (including the Banti syndrome).

Group 2. Splenectomy should be considered, and the decision based on the results seen in similar conditions, in the more progressive forms of hemolytic jaundice, particularly the acquired forms, splenic anemia, and in rare cases of pernicious anemia. When such cases of hemolytic jaundice of splenic anemia show suggestive signs of pernicious anemia, the results are usually unsatisfactory.

Group 3. Splenectomy is contra-indicated in lymphoid and, unless previously radiated, myeloid leukemia, polycythemia, and the rapidly progressive fulminant forms of hemolytic jaundice, splenic anemia and pernicious anemia.

[E. H. R.]

A METHOD FOR THE LOCALIZATION OF BRAIN TUMORS

NAFFZIGER, H. C. (*Surg., Gyn. and Obst.*, Apr., 1925), describes a method which he calls the pineal shift, and is determined by X-ray examination. He presents some beautiful plates describing his technic and draws the following conclusions:

"When the pineal gland is calcified (in about 50 per cent. of all skulls), its position gives diagnostic information in cases with intracranial pressure. The shift has been found with brain tumors, brain abscess, and in certain cases of brain swelling consequent upon a vascular block.

"A position of the pineal to the right of the mid-sagittal plane indicates a left-sided lesion above the tentorium.

"A position of the pineal to the left of the mid-sagittal plane indicates a right-sided lesion above the tentorium.

"A position of the pineal in the mid-sagittal plane in the presence of intracranial pressure indicates equal pressure on the two sides. In the chronic form of intracranial pressure as due to tumor or abscess this means internal hydrocephalus. This has been found occurring in lesions of the posterior fossa and distortion of the third and fourth ventricles."

[E. H. R.]

GALL STONES IN CHILDHOOD

GEHWOLF, from Sauerbruch's clinic at Munich, reports (*Munch. med. Woch.*, January 16, 1925) a case of cholecystitis with cholelithiasis in a child of 8 years.

[R. M. G.]

MALIGNANT TUMORS AFTER ROENTGEN THERAPY

WEINER, from Kermanner's gynecological clinic at Vienna, reports (*Wien. klin. Woch.*, Apr. 9, 1925) the occurrence of malignant tumors of the female genitalia, vulva, uterus, ovary—after deep Roentgen treatment, which he considers therefore of questionable desirability.

[R. M. G.]

LYMPHOBLASTIC ERYTHRODERMIA

SEQUEIRA and PANTON report an interesting new clinical syndrome (*Quar. Jour. of Med.*, Apr., 1925). Erythrodermia is a term applied to universal and persistent redness of the skin. It occurs, for example, associated with desquamation, in dermatitis exfoliativa, and at times in the early stage of mycosis fungoides. In the condition under discussion, of which five cases are reported, there is a chronic redness of the skin, with some thickening, usually without scaling, associated with an absolute leucocytosis and a marked relative increase in the lymphocytes. Counts of 30,000 leucocytes, with 70 per cent. lymphocytes, were not unusual, though in the early stages the blood findings are almost normal. The condition approaches but never reaches the findings met with in lymphatic leukemia. The superficial lymph nodes may be moderately enlarged, but not so much so as in leukemia, while splenic tumor is unusual. The skin shows histologically evidence of chronic inflammation, but lymphocytic infiltration occurs only in the last stages. Intense itching is the principal symptom. Treatment is unavailing. The course covers a number of years, death taking place from exhaustion or intercurrent infections.

[W. T.]

SURGICAL EMERGENCIES OF THE ABDOMEN

ELIASON, E. L. (*Ann. of Surg.*, May, 1925), presents a very valuable article, the result of well-remembered observations apparently in many cases. Much meaty information is given in small paragraphs. Among the important things mentioned are the fact that abdominal hemorrhage after trauma may be extraperitoneal. He cites a case in which a young man was struck by a tackle block—he had severe pain, nausea and vomiting, absence of peristalsis, marked rigidity and tenderness of the abdomen. Operation revealed a ruptured deep epigastric artery with a massive extraperitoneal clot. This is a condition which is rather uncommon and hardly ever considered.

He also finds that pain, tenderness and rigidity in the upper right quadrant, dullness most evident in the right flank, pain in the right shoulder, and often a bradycardia, point to rupture of the liver. In like manner, similar symptoms with pain in the left shoulder often point to rupture of the spleen.

He believes that one should never let the sun go down on a case of intestinal obstruction without exploration. Those who recover are those who are operated early as a general rule.

The article is of distinct value.

[E. H. R.]

INSULIN-GLUCOSE TREATMENT OF SURGICAL SHOCK AND NON-DIABETIC ACIDOSIS

FISHER, D., and MENSING, E. (*Surg., Gyn. and Obst.*, Apr., 1925), present a very interesting article on this subject, which is so far relatively in the experimental stage. They report nine cases, with details of treatment, and have evidently been very successful in combating both extreme degrees of surgical shock and non-diabetic acidosis by the use of insulin combined with intravenously given glucose. The article is of practical value and worth study.

[E. H. R.]

DANGER OF INFECTION FROM SPORADIC POLIOMYELITIS

VON HOESSLIN of Munich (*Munch. med. Woch.*, December 26, 1924) reports a case illustrating the possibility and danger of transmission of infection from sporadic cases of anterior poliomyelitis, probably through an intermediate insect host.

[R. M. G.]

XANTHOMATOSIS: SOME ASPECTS OF ITS BLOOD CHEMISTRY AND PATHOLOGY

TURNER, A. L., DAVIDSON, J., and WHITE, A. C. (*Edin. Med. Jour.*, Apr., 1925), in an excellently illustrated article conclude as follows:

1. Four cases of xanthomatosis are described, all of which showed disturbed fat metabolism.
2. In the first case the cause seemed related to definite liver damage.
3. The xanthomatosis of the second case was related to a disturbed fat metabolism in diabetes.
4. The third case showed a primary disturbance of fat metabolism which might have been pre-diabetic.
5. In the fourth case we have a type apparently intermediate between that in the second and third, starting as primarily a disturbed fat metabolism, the carbohydrate metabolism apparently being involved secondarily.

[R. C.]

LEPROSY IN NEW YORK CITY

FORDYCE, J. A., and WISE, F. (*Arch. of Derm. and Syph.*, 11:1, Jan., 1925), report with unusually fine photographs 47 cases of leprosy, whom they have seen in the hospitals and in private practice in New York City. Of these only three were born in the United States, and it is stated that of these two had lived in the West Indies for many years. China, West Indies and northern South America seem to have supplied most of the cases.

[A. W. C.]

THE DIAGNOSIS OF PRIMARY SYPHILIS BY CULTURE

HARRISON, F. G. (*Am. Jour. of Syph.*, 9:81, Jan., 1925), demonstrated by culture the treponema in 11 of 24 dark-field-positive cases of primary syphilis. He was able to culture the organisms from the serum together with blood suspended in salt solution and transfer them from one test tube to another. He places the method as useful in some cases, but not to supplant repeated examination by the dark field.

[A. W. C.]

TREATMENT OF DERMATOSES WITH CALCIUM CHLORATE

SIROTA, from Schitomir, Ukraina (*Munch. med. Woch.*, Mar. 6, 1925), expresses his belief that certain dermatoses are due to calcium deficiency, and finds that the therapeutic use of calcium chlorate relieves their discomfort and produces improvement or complete cure.

[R. M. G.]

RAY TREATMENT OF GYNECOLOGIC CARCINOMA

SCHOLTEN and VOLTZ (*Munch. med. Woch.*, January 2, 1925) report the results of ray treatment of 962 cases of genital carcinoma at Döderlein's clinic at Munich.

[R. M. G.]

MYCETOMA

LOVEJOY, E. D., and HAMMACK, R. W. (*Arch. of Derm. and Syph.*, 11:71, Jan., 1925), report four cases of this rare condition from California in Mexicans.

[A. W. C.]

EFFECTS OF IODINE ON BRONCHIAL ASTHMA

POLLITZER and STOLZ (*Wien. klin. Woch.*, Apr. 23, 1925) present a clinical method for determining the effects of iodine and its significance in the pathology and treatment of bronchial asthma.

[R. M. G.]

THE TREATMENT OF EPIPHYSEAL SEPARATION OF THE LOWER END OF THE RADIUS

ZADEK, ISADORE (*Arch. of Surg.*, May, 1925), presents a well illustrated article, and draws the following conclusions:

1. Epiphyseal separations of the lower end of the radius usually remain unreduced when the conventional methods used for Colles' fracture are employed.

2. Often the ulna is broken with epiphyseal separation of the lower end of the radius, and usually this occurs above the styloid process.

3. In many patients, where the epiphyseal separation has remained unreduced, nature has reconstructed the affected part so that ultimately there is no demonstrable difference between the two extremities.

4. Interference with growth is more likely to occur where the displaced epiphysis has not been replaced.

5. Interference with growth may occur in spite of complete replacement, and the family should be so informed. In the small series given above, the longest time that one of the series has been under observation is a year and a half after the injury. There is no demonstrable difference between the two wrists in any of these patients.

6. By the use of palmar flexion (about 100 degrees), we have a simple, direct and mechanically efficient method of treatment. This reduction should be made under anesthesia and the attitude maintained for two and a half or three weeks. The fingers should be left free and the patient should be able to move them readily, though the attitude of palmar flexion makes it impossible for him to make a fist. After the removal of the plaster cast there is no difficulty in forcing the hand into dorsal flexion.

7. The method of treatment described above has been applied to recent epiphyseal separations requiring only closed reduction. It has been applied to one open operation where the posterior periosteal band of new bone required division before the fragment could be forced into place, and to one open operation requiring osteotomy, union having become solid with the epiphysis displaced. Reduction was readily effected by placing the hand and wrist in the attitude of palmar flexion after division of the bone at the site of fracture.

8. Open operation should be performed through a lateral incision just anterior to the insertion of the tendon of the brachioradialis into the base of the styloid of the radius, as this will readily expose the line of separation, whereas, if the incision is made on the dorsum the callus formation may produce a confusing picture.

No anteroposterior Roentgen-ray photographs are shown after reduction, as there was no lateral displacement prior to, or subsequent to, reduction in any of these patients.

[E. H. R.]

TREATMENT OF INFECTIONS AND INFECTION DISEASES WITH MERCUROCHROME-220 SOLUBLE

YOUNG, H. H. et al. (*Arch. of Surg.*, May, 1925), present an article of 111 pages, analyzing the results of 210 cases treated by this method. They believe that the evidence furnished points definitely toward a *therapia sterilisans magna*. They speak of the toxicity and the effect upon the kidneys of injections of mercurochrome, germicidal studies in vitro, its antiseptic action in blood and urine, bactericidal action in bile in typhoid carriers, and devote the remainder of the paper to detailed case histories.

The types of cases treated are as partly follows:
57 cases of septicemia, many of these of genito-urinary origin;

6 cases of septicemia following osteomyelitis or abscess;

20 cases of puerperal infection, 12 of which were

successful, and four puerperal cases in which mercurochrome treatment resulted in failure;

7 cases of septicemia with endocarditis.

The authors conclude that, while this treatment is still more or less in the experimental stage, yet the results in many cases are so surprisingly brilliant its use is strongly recommended, especially where other routine methods fail.

[E. H. R.]

EXHAUSTION. EIGHTH STUDY—ANAPHYLAXIS, PREGNANCY

CRILE, G. W. (*Arch. of Surg.*, May, 1925), presents a short paper and draws the following conclusions:

1. The injection of a foreign serum in a normal and in a previously sensitized animal produces histologic changes in the brain which are identical with those found in exhaustion from other causes.

2. The injection of a foreign serum in a morphinized animal does not produce any destructive histologic change in the brain.

3. The histologic changes characteristic of exhaustion are found in the brains of pregnant animals. Apparently the extent of those histologic changes is in direct relation to the duration of the pregnancy and the general condition of the animal.

4. The suprarenal output is increased by the injection of a foreign serum, except in morphinized animals.

5. The electric conductivity of the brain and the liver is altered by pregnancy, the conductivity of the brain being decreased and that of the liver being increased. The degree of change is apparently in direct relation to the duration of the pregnancy.

6. The anaphylactic reaction is marked by a characteristic fall in the blood pressure, except in morphinized animals when the alteration in the blood pressure is delayed or is atypical.

7. The findings in these studies indicate that the organs primarily concerned in the production of the phenomena forming the clinical picture called "anaphylactic shock," as well as those characterizing the progress of pregnancy, are due to the same primary factor as that which causes the fundamental phenomena of traumatic or emotional "shock," i. e., exhaustion of the brain.

[E. H. R.]

THE ORAL ADMINISTRATION OF SODIUM TETRAIODOPHENOLPHTHALEIN FOR CHOLECYSTOGRAPHY

WHITAKER, L. R., GIBBS, M., and VOGT, E. C. (*Surg., Gyn. and Obst.*, June, 1925), write as follows:

"The oral administration of sodium tetraiodophenolphthalein is being used in this clinic for cholecystography in the form of pills coated with salol in syrup of Tolu.

"Cholecystograms have been produced in 93 per cent. of normal subjects by this method. We advise the use of the oral method first in cases suspected of gall-bladder disease, to be followed by the intravenous method in the few instances in which the result with the former is not conclusive.

"The advantages of the oral method are that it relieves many patients of the hospitalization necessary for the intravenous method, and that it causes them very little inconvenience and few unpleasant symptoms."

[E. H. R.]

NARZYLEN AS AN OBSTETRIC ANESTHETIC

BEHRENDT and MAIER (*Munch. med. Woch.*, Apr. 24, May 1, 1925) report the experience of Gauss's clinic at Winzburg with narzylen as an obstetric analgesic and anesthetic. They believe it absolutely safe, satisfactory, and preferable to all other methods.

[R. M. G.]

TUBERCULOSIS OF THE TONGUE

FINNEY, J. M. T., and FINNEY, J. M. T., Jr. (*Surg., Gyn. and Obst.*, June, 1925), present a very well written article on this important subject. They report in detail 15 cases and analyze in tabular form the results they find with all 15 cases.

Five appear to merit classification as primary lesions, which they realize is a very large percentage; on the other hand, in these cases no additional tuberculous lesion was discovered on careful examination. Three of these cases were operated on with the assumption that they were carcinoma. In two of the cases the lack of induration in the lesion was noted in the examination, but its significance was not then realized. In four cases the tongue lesion was the means of bringing the patient to the doctor and thus led to the discovery of a most extensive tuberculosis previously unsuspected.

There are only two cases in women in contrast to 13 in men. Direct trauma seems to be the only important causative factor in any of these cases, but in no case was the trauma charged to that popular bugbear, the pipe-stem.

Pain does not seem to be a prominent factor. The majority of the patients were in the forties; therefore, tuberculosis of the tongue may be classed as another affliction of middle life. There was no predilection for the development of the lesion on any special part of the tongue.

The authors have no special treatment to advocate. If the case seems to be primary, however, wide excision is indicated. [E. H. R.]

HYPERNEPHROMA AND CARCINOMA OF THE KIDNEY

ROSE, D. K. (*Arch. of Surg.*, May, 1925), presents a short comparative study of these two conditions and draws the following conclusions:

1. In 12 pathological specimens, the most recent removed three years ago, we find the mortality resulting from hypernephroma conspicuously lower than that resulting from carcinoma.

2. The hypernephroma is circumscribed by a relatively thin capsule, is friable, of a soft, granular consistency, at times mottled red and brown in a soft, yellowish mass, and contains gelatinous cysts. Its outer walls are lobulated, the capsule thinning over these lobules as it does over the areas of intrapelvic invasion.

3. Histologically, the piled up, clear or finely granular cells are given shape, so that sometimes they resemble either the zona glomerulosa, fasciculata, or reticularis, by the ingrowth of a sinusoidal plexus, or, in its absence, they remain broad sheets of cells with very little reticular tissue, divided irregularly by larger blood vessels.

4. Hypernephromas are less frequent than carcinomas. [E. H. R.]

JOINT TRANSPLANTATIONS AND ARTHROPLASTY

LEXER, PROFESSOR E. (*Surg., Gyn. and Obst.*, June, 1925), presents an interesting article on the absolute transplantation of joint surfaces from one human to another, and reports on his end results. The article is profusely illustrated with photographs and X-ray plates and descriptions of the operative technic. The results are surprisingly satisfactory, many non-functioning joints being made very useful. [E. H. R.]

PANCREATIC LITHIASIS

SEEGER, S. J. (*Surg., Gyn. and Obst.*, June, 1925), gives a short review of the subject and reports one case of his own. He gives a summary of 23 cases reported in the literature and a short bibliography. [E. H. R.]

PUERPERAL PYELITIS

NUNJOKS, from Benthlin's gynecological clinic at Königsberg, discusses (*Munch. med. Woch.*, Mar. 13, 1925) the occurrence, causes, and the treatment of puerperal pyelitis.

[R. M. G.]

SYPHILIS IN GLASS-BLOWERS

JACOBY of Magdeburg reports (*Munch. med. Woch.*, Apr. 10, 1925) his studies of syphilitic diseases in glass-blowers, and finds them so common as to constitute a genuine occupational risk.

[R. M. G.]

BISHOP ADVOCATES BIRTH CONTROL

BISHOP Barnes of Birmingham is against large families according to a recent report from London. He claims that human fecundity threatens human welfare and that civilization is weighted by reckless reproduction. It is curious that a canon contradicted the Bishop from the same pulpit on the same day.

TWENTY BRITISH TO STUDY IN AMERICA

THAT the British Committee of Award has made 20 selections for Fellows was recently announced by Professor Max Ferrand, educational advisor of the Commonwealth Fund. These Fellowships were established last February. There is no restriction upon the subjects of study. Samuel Andrews of Belfast is to study medicine at California. Bernard Scholefield of Oxford and Guys Hospital will attend Johns Hopkins.

If I were setting out to make a doctor of a young man entering a medical school where he could do what he chose, I would say spend your four years in three places—the anatomical dissecting room, the dead house and the clinic. In these three places (provided the anatomist is not prohibited from a consideration of function) you will hear spoken of or see illustrated at some time or other in your course all that is vital in our present-day medical knowledge. These places represent the workshops of the three fundamental subjects from which all others have branched off; and yet they have come to be perhaps the most neglected in some of our greater schools in which the confused and somewhat restive student is passed through a mill which, in great part, has no apparent relation to his ultimate goal."—*From Address by Dr. Harvey Cushing at the Dedication of the Sterling Hall of Medicine, Yale University, Feb. 23, 1925.*

SIR HUMPHRY DAVY ROLLESTON, president of the Royal College of Physicians, has been appointed Regius professor of physic at Cambridge in succession to the late Sir Thomas Clifford Allbutt.—*Science.*

THE BOSTON Medical and Surgical Journal

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HUMAN CONSTITUTION AND DISEASE

DR. GEORGE DRAPER of the Department of Practice of Medicine, Columbia University and Presbyterian Hospital, expresses in more concrete form in a paper on the relationship of human constitution to disease read before the American Association for the Advancement of Science and published in *Science*, vague impressions and observations that have doubtless occurred to many in the past. This paper deals with the request of six years' work in the Constitution Clinic of the Presbyterian Hospital where an attempt has been made to apply the technique of anthropometry to clinical medicine.

Viewed from this aspect, according to Dr. Draper, "disease ceases to be an entity in itself and becomes rather the inevitable expression of conflict between unique individuality and an adverse specific environmental force." Attention is thus turned more strikingly to the factor of susceptibility and possibly morphologic reasons for this susceptibility.

Constitution, so-called, is a definite personal attribute of the individual and is defined as "that aggregate of hereditary characters, in-

fluenced more or less by environment, which determines the individual's reaction, successful or unsuccessful, to the stress of environment." The definition is good enough. The value of morphology as a standard for classification of the race may be open to some question.

Certain observations, however, have been made. Both sexes in the pernicious anemia race have shown short trunks and long extremities, the so-called eunuchoidal habitus. Gall-bladder disease is three to four times more common in women than in men, but in addition studies have shown that the males who develop it tend toward the fat avirile type, or may express the feministic trend in their psychic pattern. Furthermore, Dr. Draper continues, the male pelvis among gall bladder people is the widest of all males and females except that of the pernicious anemia females.

It is refreshing and yet somewhat awe-inspiring to realize the many tracks by which medical investigation is sweeping onward. Some tracks are apparently endless and some end soon in cul de sacs. Most of our research is plodding in its progress and creeps forward with a microscopic eye fixed closely to the ground. Some sees only the distant goal and in its fancy arrives before the obstacles in its path are met and overcome, one by one. The microscopist needs a broader vision and the gross pathologist must not neglect his histology. Dr. Draper may be skirting the edge of a great discovery or he may be an enthusiastic visionary, seeking a foundation for a baseless theory. Time will tell.

STRYCHNINE AS A CAUSE OF ACCIDENTAL POISONING AMONG CHILDREN

YOUNG children, according to the Statistical Bulletin of the Metropolitan Life Insurance Company, are the most frequent victims of accidental poisoning. Seventy deaths among children one to four years of age recorded in 1924 from such accidents have been analyzed.

In 57 of these cases definite information regarding the type of poison was recorded. Fourteen different types in all are included, strychnine compounds leading the list with 24 deaths. Lye and other alkalies accounted for 6 deaths; fireworks, 5; exterminators, largely arsenic, 5; and petroleum oils (kerosene and gasoline), 3. Lysol, cresol, carbolic acid, methyl salicylate, furniture and brass polish, arsenic compounds, acids, ammonia and potassium silver cyanide were also represented.

Seven of the strychnine deaths were due to cathartic pills and three from tonics. The others would probably fall largely into these two classes. The importance of such compounds in this respect has probably not been widely recognized and these reliable figures may well sound a warning.

THE MEDICAL AND SURGICAL MENACE OF OBESITY

THE danger of the development of diabetes towards middle age in those who have allowed a considerable increase in their waist measurement is now generally well known by the medical profession, thanks to those physicians who have made a special study of diabetes. The number of patients who are seen in hospital clinics, for various ailments, and who are grossly over weight is increasing rapidly, so much so that obesity can be justly regarded as a definite and very real cause for alarm. It is a common occurrence at present to find that many patients, especially woman, with umbilical hernia are so obese that an "obesity cure" must be instituted before operation can be undertaken with a reasonable hope of cure. It is of interest that many cases of early breast carcinoma are in obese patients, this fact adding to the difficulties of the operation, and in some instances interfering with the kind healing of the operation site. At a certain hospital clinic at a recent date three women patients were seen within a few days of each other, their combined weight approximating seven hundred pounds.

That in certain cases the automobile is a definite factor in the production of obesity, there can be no doubt. Walking has become a lost art.

One has only to observe the long line of automobiles parked about the large apartment houses in process of construction to verify this fact. The workmen ride to and from their work in automobiles, as do the conductors in many instances to their work on the trolley cars.

The physician is in a position to spread a much needed propaganda against this menace, through talks to his obese patients, who may consult him for ailments not connected with this unsightly and dangerous condition.

MISCELLANY

HARVARD MEDICAL ALUMNI ASSOCIATION, ANNUAL MEETING AT THE HARVARD MEDICAL SCHOOL, JUNE 17, 1925

THE meeting was called to order at 12.05 P. M. by the President, Dr. Joslin. About 90 men were present.

The Treasurer's report was read. In 1923 the expenses of the Association, including \$2500 for the five Alumni Assistantships, were readily met by subscriptions from the graduates. In 1924, no requests for subscriptions were sent out, and the expenses were met by transferring money from the Savings Bank deposits. The expenses, however, in 1924, were

much smaller, since the support of the Alumni Assistantships was arranged by the Dean's office, but they included over \$1000 for a secretary-stenographer for the Bureau of Student Health and Student Appointment; and a printing bill which was something over \$400 because of the expense connected with publishing two numbers of the Harvard Alumni Bulletin specially devoted to the Medical School, which were mailed without charge to all living Medical School graduates.

In 1925 the requests for subscriptions were not sent out until late in the year, and up to the time of the meeting only \$1154 has been received, so that something over \$2000 more remains to be collected before the current expenses of this year can be met. The Treasurer plans to secure this money by sending out an additional appeal, and feels sure that the balance of the money will be secured so soon as the activities of the Association are fully appreciated.

The Treasurer's report was accepted.

The Secretary's report was read. The activities of the year have included:

1st. *The policy of requesting subscriptions* rather than demanding membership dues, as discussed by the Treasurer. At present the holders of the Alumni Assistantships are as follows:

1. Alumni Instructor in Medicine—Samuel Albert Levine.
2. Alumni Instructor in Medicine—Harry Archibald Nissen.
3. Alumni Assistant in Pediatrics—Gerald Norton Hoeffel.
4. Alumni Assistant in Obstetrics—Judson Arthur Smith.
5. Alumni Assistant in Surgery—Grantley Walder Taylor.

2d. *Graduate Schools Day* was this year held in Baltimore where, thanks to the delightful enthusiasm and warm, cordial hospitality of Dr. William S. Thayer, those doctors who attended were well repaid for their time and trouble. The attendance was small but perhaps on that account those present were better able to see the Johns Hopkins Hospital and learn of its present-day activities and its progress. In the afternoon, the Scientific Program was well arranged and was in itself worth coming to Baltimore to hear.

Mr. William Thomas '73—"Uncle Bill"—deserves great credit for his far-sighted conception of establishing this extra day which brings the graduates of Harvard's professional schools into line with the graduates of Harvard College itself.

3d. *The Dormitory.* The rise in the amount of subscriptions to the present time has been slow but steady. It is interesting to see that the two last appeals have each been followed by

an abrupt rise in the curve, showing increases in contributions amounting to between \$50,000 and \$60,000 received during the two months next following the distribution of each appeal.

Mr. Vanderbilt's very generous gift of \$125,000 to provide a gymnasium was received in April, 1925. This gift increases the total cost of the Dormitory, but it also makes the total funds available amount to \$743,706.

| | | |
|------------------------------|-------|--------------|
| 1115 Doctors have given | | \$112,839.85 |
| 537 Laity have given | | 205,866.25 |
| Mr. Harold S. Vanderbilt | | 125,000.00 |
| Investment by the University | — | 300,000.00 |

\$743,706.10

Dr. Edsall told of recent progress at the School. He called attention to the new Research Laboratories in the Thorndike Memorial building at the Boston City Hospital and in the new wing attached to the Medical Wards at the Massachusetts General Hospital.

The routine physical examination of all medical students will, through the coöperation of the staff of the Deaconess Hospital, be initiated in the Fall of 1926.

An interesting arrangement with Harvard College provides that pre-medical students in college be guided by a tutor assigned by the Medical School. At present this tutor is Dr. Hallowell Davis, who is spending the other half of his time in Research in Physiology.

The new schedule at the Medical School, which allows the student time for study and reflection, is amply justified by the end results. Reports from the National Board of Examiners shows that our students give a better account of themselves than those from any other University. Furthermore, in medical education more Harvard Medical graduates hold positions of academic importance than those of any other School. The students are devoted to their work, and almost all spend part of the summer vacation in anticipating work for the next year, which indicates their desire for more time to profit by the facilities offered.

The following officers were elected for the next year:

President—Dr. Elliott P. Joslin.

Treasurer—Dr. Albert A. Hornor.

Secretary—Dr. Francis M. Rackemann.

Dr. William T. Councilman then took the floor, and sitting comfortably in a chair before the desk, gave a delightful account of his recent experiences in China. Though the subject of old age interested him, his scientific training had not enabled him to find out much about it from a theoretical point of view, and his present-day activities indicate only too clearly that his practical experience with this disease is very deficient.

The meeting adjourned at 1.30 P. M., and luncheon was served on the terrace.

MALARIA COMMISSION OF THE LEAGUE OF NATIONS

THE New York Times reports that the Malaria Commission of the League of Nations health organization met in Geneva, on March 23, under the chairmanship of Dr. Lutrario of Italy to draw up a program of investigation in Egypt, Palestine, Syria, Turkey, Sicily, Corsica and Spain. The investigation will be under way from May to September and will be a step in the international fight on malaria undertaken by the health organization of the league. A similar investigation has been made in Italy, the Balkans and in Russia. The session also will deal with the final report on the recommendations regarding malaria in Albania. Requests from the Turkish government for the appointment of experts to help to organize an anti-malaria campaign in Turkey and one from the French government to make a special inquiry in Corsica will be considered. A delegation to the first International Malaria Congress in Rome in October will be appointed, while a proposal to appoint additional members from the United States, India and France is to be considered. The commission also will discuss extensively the cheapest and most effective drugs to be used as well as the value of quinine and cinchona alkaloids in combating malaria. There also met, under the auspices of the League Health Board, Inspectors of Labor from ten countries, including the United States, for the first interchange of matters relating to industrial hygiene. After the conference shall have been finished the delegates will go to Belgium, France, Great Britain and Holland to study the methods of hygiene applied in those countries. On March 25, the general interchange of medical health officers which opened in England was continued in Geneva, when Dr. Norman White, *en route* home from Singapore after a study of epidemiological diseases, submitted his report.—*Science*.

AUTOMOBILE FATALITIES, JANUARY 1 TO MAY 23, 1925, REPORTED BY THE DEPARTMENT OF COMMERCE, WASHINGTON

WASHINGTON, D. C., May 29, 1925.—The Department of Commerce announces that reports of automobile fatalities in 1925 have been received from 70 cities of 100,000 population or more.

For 52 cities with an aggregate population of 26 millions, there were 1,631 automobile fatalities reported in the period January 1 to May 23, 1925, as contrasted with 1,564 such fatalities in the period January 1 to May 31, 1923. Of these 1,631 deaths, 357, or 22 per cent., were reported in the four-week period ending May 23, 1925.

Of the 58 cities for which comparisons are

possible for the early months of 1923 and 1925, 30 show more automobile fatalities reported in the period January 1 to May 23, 1925, than occurred before June 1, 1923.

So far this year New York City has reported 334 automobile fatalities, Chicago 198, Philadelphia 95, and Detroit and Cleveland, each 86, while for the last four-week period, the figures are New York City 80, Chicago 49, Philadelphia 27, Detroit 24 and Cleveland 17. Figures for other cities are given in the table.

Of the 70 cities reporting for this last four-week period, the following 10 show no fatalities: Camden, Des Moines, Fall River, Lowell, Lynn, New Bedford, Richmond, Somerville, Tacoma, and Yonkers.

New Bedford is the only city which shows no such fatalities so far this year.

Automobile fatalities in New England cities reported so far this year, January 1 to May 23, 1925. [Figures show deaths in each city, regardless of place of accident.]

| Place of Death | Number of Automobile Fatalities Reported January 1 to May 23, 1925 |
|-------------------|--|
| Boston | 46 |
| Bridgeport | 5 |
| Cambridge | 0 |
| Fall River | 4 |
| Lowell | 4 |
| Lynn | 3 |
| New Bedford | 0 |
| Providence | 32 |
| Somerville | 2 |
| Springfield | 3 |
| Waterbury | 7 |

BRITISH SOCIAL HYGIENE COUNCIL

THE British Social Hygiene Council is the name by which the National Council for Combating Venereal Diseases will be known in future. This change does not indicate that any less attention will be given to direct propaganda and public enlightenment on the medical aspect of the problem of Venereal Disease.

In 1920, 105,000 new cases presented themselves at the free treatment centres: this figure had fallen to 73,000 in 1923, the cases of syphilis alone having fallen from 42,000 in 1920 to 23,000 in 1923.

This is mainly due to efforts jointly made by the Ministry of Health, the Local Authorities and the Council to secure that the infected members of the public should seek and continue treatment at the centres, where such treatment is provided free of charge for any member of the public.

During the last eight years over four mil-

lion pamphlets dealing with Venereal Diseases, their prevention and treatment, have been distributed by the Council to individual members of the general public. Over 15,000 lectures have been given and a minimum of 3,000,000 have been enlightened through the cinema film and the spoken word.

If the present efforts along these lines can be continued and extended there is every hope that syphilis and gonorrhea will within the lifetime of the present generation cease to take its present heavy toll of the life and health of posterity.

The medical field is not, however, the only one in which efforts can be made towards building up conditions calculated to lead to a permanent diminution of disease. The broader field of Social Hygiene must be entered if the direct medical efforts are to be successful. The problem of preventing Venereal Diseases is part of the wider problem of preventing all disease through the better understanding of the laws of health and the development of a virile health-conscience in the rank and file of the community. The Royal Commission, the Trevethin Report and other official publications have all emphasized the need of adjusting the educational and social influences surrounding the rising generation in such a manner as to develop in them an individual sense of racial responsibility. The British Social Hygiene Council hopes to be able to take an active share in this larger effort and so make their efforts in the particular section of the Social Hygiene field more effective.

In altering its title the Council ranges itself with its daughter Councils in the Dominions. The Canadian Council for Combating Venereal Diseases adopted the title of the Canadian Social Hygiene Council with the consent of the parent body two years ago; the South African Council is now taking the same step, and the change will be welcomed by many of the Branch Councils throughout the Empire. Our colleague organization in the United States of America has long been known as the American Social Hygiene Association. This coördination of effort will, we are convinced, have an international reaction which can only prove beneficial.

The Right Hon. Lord Trevethin, who, after having so ably presided over the Committee of Inquiry, has for the last two years presided over the National Council, is now relinquishing his office to Sir Auckland Geddes, formerly Minister of Health. Sir Auckland Geddes holds the same office in the Society for the Prevention of Venereal Disease, which may, we hope, be taken as an indication that all those interested in this important but difficult public health problem will unite in a strenuous endeavor to remove the burden of disease, defect and inefficiency now borne by this country from a preventable cause.

TUBERCULOSIS SURVEY OF BOSTON

At a meeting of interested societies in Boston in the John Hancock building, on June 9, Dr. John B. Hawes, 2d., president of the Boston Tuberculosis Association, outlined the plans of the Association with reference to the proposed tuberculosis survey of the city. This plan has been under discussion for the past three years, but for financial reasons was not undertaken. The continued increase in receipts from the Christmas seal sales places the Association this year in a position where the undertaking of the survey is feasible. The meeting, which included representatives of some twenty-five local organizations and the Massachusetts Department of Public Health, was for the purpose of outlining the general plans and securing the cooperation of the various organizations, all of which had some points of contact with the malady.

In his brief address to the company Dr. Hawes noted the increasing interest in the work of the Association as evidenced by the continually growing receipts from the seal sales, which are the principal support of the Association in its work. This means of course a better understanding by the people of the need of such effort, in fact a higher standard of public opinion.

Dr. Hawes sketched the various activities undertaken by the Association as its receipts increased. The establishment of the Prendergast Preventorium was the first of the newer group of these efforts, and this means a greater chance of a useful life to the twenty-five little girls who are cared for at one time. Prendergast Preventorium is now an institution so well known that the citizens of Boston will see that it is maintained. Next in order came the establishment of a "follow-up," lacking which there is danger that with the return to the home environment, some of the good work in building up might be undone.

Last summer it was found possible to utilize the acres that constitute the Prendergast estate for a large summer camp for boys as well as girls, and more than one hundred underweight children were cared for during the heated months, their ages being those important in fortifying them against ill health. The present summer this large camp is again underway, with the bettered condition of a permanent dining hall in place of the tent accommodations of last year. A schoolhouse completely open on three sides has been built for the children of the Preventorium, whose average stay is between six and eight months. City water and gas have been introduced and other improvements needed with the summer capacity of more than one hundred and twenty-five.

Besides this work that centres about the Preventorium the Association has been active in introducing the Modern Health Crusade,

phlyctenular keratitis is receiving the attention of a skilled and experienced expert and a full-time assistant is looking after the problems presented by the cases of adults in whom the disease is arrested.

"It is now of prime importance," said Dr. Hawes, "to know whether we are on the right track, whether these efforts are the best ones to be undertaken for the control and prevention of the disease according to the best knowledge and the ascertainable facts. It is for this reason, to learn precisely what are the conditions in Boston, that we are undertaking this survey."

Dr. Hawes then presented Murray P. Horwood, Ph.D., who is to direct the survey, who sketched very briefly the essentials of such a survey. The JOURNAL presents in place of this sketch one especially prepared for it. Speaking for the different organizations, Dr. Eugene R. Kelley of the State Health Department, Dr. Victor Safford of the Boston Health Department, Dr. John F. O'Brien of Boston Sanatorium and Mr. Horace Morrison of the Boston Health Council briefly commended the survey and cooperation on all sides was assured.

PLAN OF THE SURVEY

The survey will include first of all, a thorough study of the tuberculosis mortality since 1900, especial attention being given to age, sex, nativity, color, conjugal relationships with perhaps consideration of occupations. A similar analysis will also be made of cases of record at the various clinics in Boston, and here attention will be directed towards evaluating the adequacy of the medical and nursing personnel, the location of the clinics, their frequency, their activity in finding new cases and the follow-up. The general efficiency of the service will also be considered. A general study will be made of available hospitals and sanatoria that accept tuberculous patients. Of course the number of beds available and the character of treatment provided will be recorded. Especially of importance will be the operation of preventoria and summer health camps, and here they will be discussed further as means for health education and the prevention of tuberculosis.

Some features in the activities of official health agencies will be observed and tabulated, such as the protection of milk and food supplies, laboratory facilities for examining sputum, popular and personal health education. In the schools the work of the open-air school, open-window classes and the like will furnish interesting data, and the school nursing service, nutrition work and health education and health promotion through the schools will be included in the inquiry. Then there are to be considered various matters like housing, particularly as this may be concerned in the spread of tuberculosis, and preventive efforts in the industries. Then naturally the part that the local social

and welfare agencies play must be considered since it is recognized that prevention is to a very large extent a home problem, in which these agencies play a most important part towards the solution. There is a further definite problem here, namely, the care of the tuberculous patients in the home.

At the present moment there is under way the 10-year program of the Massachusetts Department of Public Health, and there is every reason to believe that as this may be planned for Boston, the survey will demonstrate in the most practical way the basis that there may be for the follow-up, and serve to make it the more valuable. It will also tie-in in most satisfactory fashion with the five-year review of tuberculosis conditions, now in progress, of the Health Department of the city of Boston.

A tuberculosis survey conducted on the broad lines sketched above, and in which the many agencies will cooperate in the furnishing of details of their individual accomplishments, has a distinct potentiality for beneficial service in a number of ways, some of which are here noted.

1. Such a survey cannot fail to assemble a mass of reliable information concerning all the anti-tuberculosis work under way in Boston today, and will assuredly be a ready and constantly available reservoir of facts with reference to the local situation. It will be the basis for planning new work effectively, it will have its value for educational and publicity purposes, and will furnish data for refuting unsound or baseless statements.

2. The recommendations of the survey should prove to be the basis for an effective anti-tuberculosis program for the next five years at least, and since such a program will be based on an exact knowledge of existing conditions, it should be sound and practical. These recommendations should direct the expenditure of funds in the anti-tuberculosis campaign in the most effective channels. In this way the survey cannot fail to be an economy, since it ought to prevent any wasteful or extravagant expenditures.

3. The survey will be a most powerful factor to popular health education both during the survey and after it is completed.

4. The survey ought to be a powerful agent in introducing and stimulating important needed reforms.

5. The survey should serve as a means for evaluating the importance of the various existing anti-tuberculosis activities.

6. Finally, it should serve as a means for coordinating more thoroughly and effectively the anti-tuberculosis activities in Boston.

Murray P. Horwood, Ph.D., who is the director of the survey, is probably the most experienced individual in tuberculosis surveys in the country. He was graduated by the Massachusetts Institute of Technology in 1916, re-

ceiving successively from the Institute the degrees S.M. and Ph.D., the latter in 1921. He was one of the group intimately associated with Professor W. T. Sedgwick, and in addition to his regular position as assistant professor of Biology and Public Health in his Alma Mater, has placed his vacation times at the service of science, largely in organizing and conducting surveys.

The first of these was the health rating of the eight large cities in Oklahoma, which was undertaken by the Oklahoma Tuberculosis Association. The succeeding year he undertook a survey of health conditions in Lafayette and Tippecanoe counties, Ind., at the instance of the local association. Next there was a public health survey of the town of Glen Ridge, N. J., followed by the comparative survey of two Massachusetts cities, Taunton and Quincy. This inquiry was novel in that it made a comparison of the health conditions of two cities of about equal size, which presented widely different vital statistics.

In 1922 Dr. Horwood directed the tuberculosis survey of Philadelphia, which was financed by the Philadelphia Health Council. The immediate result of this was the establishment of tuberculosis clinics in the city, together with the creation of a Division of Tuberculosis in the city board of health.

Last year Dr. Horwood carried on the survey of fifteen New England cities of about 50,000 of population, being a section of the great national survey undertaken by the American Child Health Association.

Crystallizing his experiences into form available for others to undertake such work Professor Horwood has published a volume, "Public Health Surveys; What They Are, How to Make Them, How to Use Them," which is practical and helpful.

CORRESPONDENCE

AMERICAN MEDICAL ASSOCIATION

COUNCIL ON PHARMACY AND CHEMISTRY
535 North Dearborn Street, Chicago, Ill.
May 29, 1925.

Editor, Boston Medical and Surgical Journal:

In addition to the articles enumerated in our letter of April 30, 1925, the following have been accepted:

Lederle Antitoxin Laboratories—

Poison Ivy Extract—Lederle (in Almond Oil);

Poison Ivy Extract—Lederle (in Almond Oil),
1 c.c.

Rabies Vaccine—Lederle (Semple Method).

H. K. Mulford Company—

Ash Tree Pollen Dried—Mulford; Bermuda Grass Pollen Dried—Mulford; Box Elder Pollen Dried—Mulford; Canary Grass Pollen Dried—Mulford; Careless Weed Pollen Dried—Mulford; Cocklebur Pollen Dried—Mulford; Corn Pollen Dried—Mulford; Cottonwood Pollen Dried—Mulford; Daisy Pollen Dried—Mulford; Dandelion Pollen Dried—Mulford; Dock Pollen Dried—Mulford; False Ragweed Pollen Dried—Mulford; Goldenrod Pollen Dried—Mulford; High Ragweed Pollen Dried—Mulford; Johnson Grass Pollen Dried—Mul-

ford; June Grass Pollen Dried—Mulford; Lamb's Quarters Pollen Dried—Mulford; Low Ragweed Pollen Dried—Mulford; Maple Pollen Dried—Mulford; Marsh Elder Pollen Dried—Mulford; Mountain Cedar Pollen Dried—Mulford; Mugwort Pollen Dried—Mulford; Oak Tree Pollen Dried—Mulford; Orchard Grass Pollen Dried—Mulford; Perennial Rye Grass Pollen Dried—Mulford; Plantain Pollen Dried—Mulford; Redroot Pigweed Pollen Dried—Mulford; Redtop Pollen Dried—Mulford; Russian Thistle Pollen Dried—Mulford; Rye Pollen Dried—Mulford; Sagebrush Pollen Dried—Mulford; Shad Scale Pollen Dried—Mulford; Sheep Sorrel Pollen Dried—Mulford; Slender Ragweed Pollen Dried—Mulford; Sugar Beet Pollen Dried—Mulford; Sunflower Pollen Dried—Mulford; Sweet Vernal Grass Pollen Dried—Mulford; Timothy Pollen Dried—Mulford; Velvet Grass Pollen Dried—Mulford; Walnut Tree Pollen Dried—Mulford; Western Ragweed Pollen Dried—Mulford; Wormwood Pollen Dried—Mulford.

Insulin—Mulford:

Insulin—Mulford, 10 units, 5 c.c.
Insulin—Mulford, 20 units, 5 c.c.
Insulin—Mulford, 40 units, 5 c.c.

Parke, Davis & Co.—

Typhoid Vaccine (Propylactic), 30 c.c.
Typhoid Paratyphoid Vaccine (Prophylactic), 30 c.c.

Powers-Weightman-Rosengarten Company:

Stovarsol:
Stovarsol Tablets, 0.25 gm.

Swan-Myers Company—

Annual Sage Concentrated Pollen Extract—Swan-Myers; Ash Concentrated Pollen Extract—Swan-Myers; Black Walnut Concentrated Pollen Extract—Swan-Myers; Blue Grass Concentrated Pollen Extract—Swan-Myers; Box Elder Concentrated Pollen Extract—Swan-Myers; Buckhorn Concentrated Pollen Extract—Swan-Myers; Burweed Marsh Elder Concentrated Pollen Extract—Swan-Myers; Cocklebur Concentrated Pollen Extract—Swan-Myers; Corn Concentrated Pollen Extract—Swan-Myers; Cottonwood Concentrated Pollen Extract—Swan-Myers; False Ragweed Concentrated Pollen Extract—Swan-Myers; Giant Ragweed Concentrated Pollen Extract—Swan-Myers; Goldenrod Concentrated Pollen Extract—Swan-Myers; Hemp Concentrated Pollen Extract—Swan-Myers; Hickory Concentrated Pollen Extract—Swan-Myers; Lamb's Quarters Concentrated Pollen Extract—Swan-Myers; Marsh Elder Concentrated Pollen Extract—Swan-Myers; Mugwort Concentrated Pollen Extract—Swan-Myers; Oak Concentrated Pollen Extract—Swan-Myers; Orchard Grass Concentrated Pollen Extract—Swan-Myers; Prairie Sage Concentrated Pollen Extract—Swan-Myers; Quailbrush Concentrated Pollen Extract—Swan-Myers; Red Sorrel Concentrated Pollen Extract—Swan-Myers; Redtop Concentrated Pollen Extract—Swan-Myers; Russian Thistle Concentrated Pollen Extract—Swan-Myers; Sagebrush Concentrated Pollen Extract—Swan-Myers; Short Ragweed Concentrated Pollen Extract—Swan-Myers; Slender False Ragweed Concentrated Pollen Extract—Swan-Myers; Southern Ragweed Concentrated Pollen Extract—Swan-Myers; Spiny Amaranth Concentrated Pollen Extract—Swan-Myers; Sudan Grass Concentrated Pollen Extract—Swan-Myers; Sycamore Concentrated Pollen Extract—Swan-Myers; Timothy Concentrated Pollen Extract—Swan-Myers; Western Ragweed Concentrated Pollen Extract—Swan-Myers; Western Water Hemp Concentrated Pollen Extract—Swan-Myers.

CHANGE OF AGENCY

Sulfarsenol, formerly distributed by Charles Leich & Co., is now distributed by the Anglo-French Drug Company, which supplies .06, .12, .18, .30, .42, .60 gm. ampules. The Council has continued the acceptance of Sulfarsenol under the new distributor.

Yours truly,

W. A. PUCKNER, *Secretary*,
Council on Pharmacy and Chemistry.

LONDON LETTER

(From Our London Correspondent)

A very interesting session of the British Congress of Obstetrics and Gynecology occurred April 22, 23 and 24, 1925, at the rooms of the Royal Society of Medicine.

A discussion on the prognosis and treatment of puerperal sepsis, following reports of committees of the Royal Society of Medicine and the North of England Obstetrical and Gynecological Society, brought out that Wales has a higher mortality due to puerperal sepsis than England, and that in both England and Wales the death rate from puerperal sepsis was lowest in rural districts and increased with the growth and density of population, but other causes of death were lower in the urban districts. It was agreed that there should be a larger number of qualified midwives in Wales.

Professor J. Whitridge Williams of Baltimore analyzed reports from London and the North of England, where in the former the mortality from sepsis is 35.8 per cent. and in the latter section 76 per cent., the net mortality being 48 per cent. out of 403 cases treated. These reports show that women who had been subjected to much manipulation or hemorrhage were more liable to infection than the others. It is generally believed that the infection is usually due to contact. Rapid pulse and high temperatures are serious indications. It appears that the cases may be divided into two groups: One which will recover if left alone and those which would die regardless of treatment. Dr. Williams believes that interference with the interior of an infected uterus is unwise.

There seems to be a marked difference in the results found after using anti-streptococcal serum, cases in the North of England showing a higher death rate. Severe cases did not respond to the serum. He believed that streptococci existed in the vaginas of two out of three pregnant women and felt that the use of a speculum increased the danger. In some cases women examined themselves and in some there was a history of coitus during labor.

Dr. Blair Bell contended that cases having sudden onset of septicemia and little local resistance practically all died, but he disagreed with Dr. Williams, for he felt that surgery can be credited with saving lives. He was convinced that coitus shortly before full time was responsible for the introduction of streptococci into the vagina. Mr. Victor Bonney believed that a large number of these cases are autogenetic.

Several other speakers emphasized the need for more careful investigation of the causes of sepsis and the necessity for ante-natal care.

The following resolution was approved at a subsequent meeting:

"In the opinion of the British Congress of Obstetrics and Gynecology, the most urgent requirement in connection with the problem of sepsis is the provision of adequate accommodation for the reception and treatment of these cases in hospitals, supervised, wherever possible, by obstetric surgeons."

At the Thursday morning session the chair was taken by Professor B. P. Watson.

PROLAPSUS UTERI

Professor W. W. Chipman (Montreal) described, with illustrations on the epidiascope, the operation now being done in Montreal for this accident. He said this was the most common and most troublesome hernia which those of the specialty had to deal with, and this particular operation had successfully stood a ten years' test. No one operation would suit all cases, however, though this was fitted for many. Prolapsus uteri was a sacro-pubic hernia through the fibrous diaphragm of the true pelvic floor. In common with all hernias, it had a canal of descent, a sac, and a sac-content, with a sac covering or wall. It was the inclusion of the important organs—uterus, bladder and anterior wall of the rectum—in the sac covering which had formerly misdirected the surgeon's attention. This sacro-pubic hernia was in reality a sliding hernia. The essential part of the pelvic floor was the fibro-facial hammock, while above was the accessory support of the peritoneal ligaments, and, below, the accessory support of the sphincter layer. The operation he was describing consisted in the exposure of the facial cleft, the replacement of the viscera, and the radical cure of the hernia. It was, in reality, a simple operation.

Mr. R. H. Paramore said he had not met with the masses of fibro-muscular tissue in the pelvis which Professor Chipman described. During the last five years he had been doing an operation on the muscle floor of the pelvis only, which he described, and mentioned three cases in which he had carried it out.

Dr. G. Fletcher Shaw said that if the perivascular tissue were thoroughly stitched in front of the cervix and a posterior colporrhaphy done, there would be no fear of any recurrence. The operation was much more satisfactory when a good portion of the cervix was removed.

Dr. Leith Murray said that in Newcastle the cervix was amputated for this condition in child-bearing women.

Professor Munro Kerr remarked that if the cervix were well dilated before doing amputation, stitching was rendered very much easier. The vagina should be thoroughly packed afterwards.

Mr. T. G. Stefens spoke of the secondary hemorrhage which was sometimes encountered about the seventh to the tenth day, usually due to the cutting through of the suture which turned in the mucous membrane to the cervical canal.

Dr. FitzGibbon said one of the advantages of the operation was the conservation of vaginal mucous membrane, especially at the fornices. Unless there was marked hypertrophy of the cervix it could usually be saved.

Professor Chipman, in reply, said that in the last 100 cases followed up there were eight recurrences. Thirteen of the cases on whom this operation was done had had children subsequently. He pointed out the importance of conserving the cervical sphincter. He did not pack the vagina, but a strip of gauze was placed in the vagina to keep opposing lines of suture apart. These sutures controlled hemorrhage in a wonderful way. He always considered that a secondary hemorrhage was due to sepsis, or at least to necrosis; reactionary hemorrhage might be due to faulty technique. To avoid wounding the ureter he passed his suture parallel to it. He did not use fine chromic gut, as it was apt to cut through.

AFTER-RESULTS OF THE SUPERFICIAL GILLIAM OPERATION

Dr. B. Solomons read a contribution on this subject. He said 176 replies to the questionnaire were received, and no case was included whose operation was done less than a year previously. Four cases of intractable sciatica were cured absolutely by the

operation. Of the 176, 107 had had backache before the operation, and of these, 101 reported relief; 6 were not cured of it. Many had been cured by it of dysmenorrhea and frequent abortions. If catgut was used for the sutures, recurrence of the displacement would occur.

Professor A. Donald protested against these abdominal operations for retroversion, the frequency of which almost amounted to a scandal.

The Chairman spoke of the difficulty of diagnosing the cause of the condition, and he agreed that in doubtful cases a pessary should be tried. Most of the cases of backache were due not to the retroversion but to the associated prolapse. Every means should be taken to eliminate the uterus as a possible cause.

At the afternoon session the chair was occupied by Professor T. Wilson.

PREMATURE SEPARATION OF THE PLACENTA

Professor Whitridge Williams gave a contribution on this subject. He said that in 9000 admissions to his clinic there were 57 cases of premature separation of the placenta and 64 cases of placenta previa. He discussed specially 40 cases, from 15 to 43 years of age. Twelve were primiparae. In 19 of the 40 cases the condition was mild, in 21 it was severe. Ten cases required Caesarean section. There were 3 maternal deaths, 29 fetal deaths, all in the Caesarean section cases. Inflammatory changes in the decidua could be excluded, and syphilis played no part; in 37 of the 40 cases the Wassermann was negative. He admitted he did not know the cause of the condition. It had been stated that albuminuria played a marked part, the incidence of that being given as anything between 56 per cent, and 91 per cent. Fifteen of the cases taken showed no signs of albuminuria, either before or after the accident; 25 did. In two cases which came to autopsy there was no sign of any form of toxemia. Fifteen cases presented a ligneous consistency, which was thought to be pathognomonic.

THE RADIUM TREATMENT OF INOPERABLE CARCINOMA

An elaborate paper, with statistics, was read on this subject by Dr. Malcolm Donaldson. He laid stress on the importance of records of radium treatment being full, giving the microscopical diagnosis, the kind and quantity of radium emanation used, the duration, etc. He entered into detail on the different methods employed and the general results obtained.

A contribution on an allied subject was read by Dr. G. I. Strachan, based on a study of 40 cases of carcinoma of the cervix. He said that if inflamed appendages were present radium should not be applied, and the same was true in the presence of vesico-vaginal fistulae, as acute cystitis might then be set up. In conclusion he said that in cases of inoperable carcinoma of the cervix radium was the most potent therapeutic agent yet found. In carcinoma of the cervix the reaction to radium was not so good, and in epithelioma of the vulva the effect was bad.

Dr. Agnes Bennett read a paper on the Albuminurias of Pregnancy in the State Maternity Hospitals of New Zealand, in which she pleaded for definite standards and pronouncements on many points as a guide to the general profession.

THE TOXEMIAS OF PREGNANCY

Professor Louise McIlroy read a contribution by herself and Dr. E. Pillman Williams on the toxemias of pregnancy from their clinical and chemical aspects. The paper stated that the authors had not arrived at any definite explanation of the origin of the group of conditions dealt with, nor why one symptom or group of symptoms should declare them-

selves. In many it was difficult to say where physiological changes ended and pathological changes began. In many instances they considered that toxic conditions existed previous to the pregnancy, and that the chief sources of these toxins were in the intestine. The ovum was added to the toxic factory and contributed its quota to the toxic state. In pregnancy there was an inability to cope with the toxins arising from defective excretion, coupled with toxins from the ovum, though the trophoblast was responsible for the generation of toxins rather than the fetus. The main point was as to whether toxemia was present, and if so, what was its severity? In many of the cases there was chronic intestinal stasis with distension of the colon over the region of the cecum; in many there was a history of attacks of appendicitis. Toxemia was more marked in primigravida than in multipara. There was a definite fall of nitrogen content in the blood throughout the whole gestation. Most of the cases of vomiting admitted to the wards showed signs of toxemia; it was not a question of mere neurosis. Headache in some cases was found to be due to increased intracranial tension, and usually there were small rises in the blood-urea. If edema occurred early in the pregnancy, the cause was to be found in deficient renal function. In cases which had vomiting, increased food gave better results than the induction of abortion. Only 3 of the 172 cases recorded had to have abortion induced; and in this series there was only one case of eclampsia.

At the concluding session on Friday morning the chair was occupied by Dr. Louis Cassidy.

ENDOMETRIOMA

Professor A. Donald and Dr. K. V. Bailey submitted the results of a clinical and pathological study of endometrioma, bringing out the chief points by epidiascope demonstrations. One hundred and eight cases were passed in review. Of 55 cases there were 35 women who had had no pregnancy for seven years. The most important symptom was dysmenorrhea, which was present in 70 per cent. It was acquired in 55 per cent. of these. Menorrhagia was present in 57 per cent., leucorrhoea in 38 per cent., and backache in 28 per cent. Pain on defecation and other rectal troubles were complained of by some. Tarry cysts were found at operation in 77 per cent., and an adenomyoma in the recto-vaginal space in 63 per cent. A very important feature was that the rectum was adherent in 76 per cent., and there was need, the authors considered, for a careful investigation of the nature of the causal irritation.

The last contribution was a very elaborate one, supported by a wealth of photomicrographic slides, on the implantation of the human ovum, which was given by Professor J. H. Teacher of Glasgow. He showed that fertilization and implantation did not correspond to any part of the cycle in particular, but might occur at various points. There was not a long delay in fertilization, but spermatozoa had a long viability. It seemed that rupture of the follicle nearly coincided with the insemination, and that fertilization took place very shortly after that. Fertilization had occurred within four or five days of the period being due, and as implantation did not occur for at least seven days—some declared it was ten days—it was not implantation of the ovum which stopped menstruation. That function was stopped, in his view, by fertilization.

The thanks of the Congress were accorded Professor Teacher for his demonstration.

During the Congress an instructive pathological exhibition was held under the control of Dr. Everard Williams. On Thursday members of the Congress dined together, and on Friday afternoon many operations were witnessed at a number of London hospitals.

PREVENTIVE MEDICINE—A CARD OF INSTRUCTION

The Commonwealth of Massachusetts
Department of Public Health

State House, Boston, June 13, 1925.

Editor, Boston Medical and Surgical Journal:

As was announced through your column last March, the Department prepared and distributed to each physician in the Commonwealth a card recommending that the individual take up with his physician the question of prophylaxis against smallpox, typhoid and diphtheria, as well as considering the health examination. This was headed "Preventive Medicine from Your Family Physician," and it was proposed that these should be distributed by physicians to their patients and their patients' families through the mails and table of the waiting room.

As was reported in May, the original supply of fifteen thousand was soon exhausted. Based on pertinent suggestions from the doctors, some important changes were made and a new edition of twenty-five thousand has been received. We are anxious to distribute these as rapidly as possible and should be glad of requests for the same.

We are also anxious to get further criticism based on actual use so that further improvements may be made on the next printing.

I should appreciate your calling the attention of your readers to this matter.

Yours truly,

EUGENE R. KELLEY, Commissioner.

ZINC STEARATE DUSTING POWDERS FOR INFANTS

American Medical Association

June 16, 1925.

To the Editor:

To bring to the attention of the medical profession and the drug trade the danger of zinc stearate dusting powders to infants, the following information is submitted for publication.

Yours truly

WM. C. WOODWARD, Secretary,

Committee on Zinc Stearate Dusting Powders.

The second report of the Committee on Accidents from Zinc Stearate Dusting Powders, appointed by the Board of Trustees of the American Medical Association, has recently been published. Copies of this report, with an appendix showing the opinions of thirty-four representative pediatricians on the therapeutic value of such powders, can be obtained on request. Address, Committee on Zinc Stearate Dusting Powders, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, enclosing a self-addressed, stamped envelope.

There were reported to the committee 131 accidents from the inspiration of zinc stearate dusting powders by infants. Twenty-eight of the victims died. The committee conferred with representatives of certain distributors concerning the dangers incident to the use of such powders on infants. Following a meeting held at the headquarters of the American Medical Association these distributors agreed to cooperate by adopting self-closing containers for the powders they distribute and agreed that cautionary labels are desirable. Opinions were secured from thirty-four representative pediatricians concerning the therapeutic value of zinc stearate dusting powders. Thirty-one believe that such powders have no advantage over other dusting powders, that they constitute a hazard to infant life, and that their use should be discouraged.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, May 28.

THE INFECTIVITY OF TUBERCULOSIS

The Vienna Commission on Tuberculosis issued its yearly report from 1924 in April, giving definite answers to certain definite questions submitted to the commission. These answers are derived from a mass of experiments carried out on behalf of the commission at a big government farm and may be thus summarized: 1. In many cases, human tuberculosis is identical with the bovine disease. 2. Mammals and man can be reciprocally infected with the disease. 3. Tuberculosis can be communicated to man from infected cow's milk or tuberculous meat (pork or beef); but the danger from fowls, geese, turkeys is negligible. 4. There are three distinct types of tubercle bacilli: avian, bovine and human. 5. The bacillus of lupus is of the bovine order, but is of a modified type and differs in certain respects from the usual bovine bacillus found in cattle.

STERILE MARRIAGES AND EXAMINATION OF SPERMAL FLUID

Dr. Krieshaber has recently cautioned gynecologists against the treatment of sterility on the assumption that the condition is always due to the woman. In every case, he believes, the husband should be questioned, and careful examination for spermatozoa should be made several times, at fairly long intervals, between which the subject should abstain from intercourse; it is well known that a temporary azoospermia occurs after repeated coitus. Dr. Krieshaber has notes of 360 cases of sterility, in 46 of which he found absence of spermatozoa. In 16 of these cases the wives had been under treatment. Furthermore, he found in 35 instances persistent oligospermia, and in 12 instances necrospemia.

BORIC ACID IN FOOD

In a lecture on the adulteration of food articles the president of the Vienna Municipal Board of Hygiene said that all medical men are averse to the addition of chemical preservatives to food, but when called upon to give evidence in a prosecution for adulteration by such an addition they often find it difficult to support this general opinion by the citation of actual facts. The chief preservatives to which milk and provision dealers resort are boric acid and borax, and it is consequently in regard to these that information is most needful. The board has published in a recent bulletin the particulars of a series of experiments carried out under the supervision of their officers with a view to ascertaining what effect, if any, the addition of boric acid to food produces on healthy individuals.

The conclusions arrived at were that boric acid or borax tend to produce a slight loss of weight, which may or may not be recovered during the administration, and that while some individuals experienced no adverse symptoms under small doses, half a gram of boric acid, or its equivalent of borax, sooner or later tends to cause nausea, anorexia, discomfort of the stomach, and occasionally headache. The maximum dose that can be safely administered in the course of twenty-four hours is four grams, but three grams sometimes were followed by disturbance. The daily consumption of half a gram of boric acid, or its equivalent in borax, by a healthy person may be continued for some time, but even this may lead to digestive upset in certain individuals. As the experiments were performed on healthy adults, the conclusion is inevitable that boric acid and borax cannot be given regularly to infants in milk without grave risk.

PSYCHIC TRAUMA AND PROGRESSIVE PARALYSIS

An interesting case is reported by Dr. Walderhorn, in Upper Austria. He was required to examine a

man, aet. 48, a lawyer, with the object of deciding whether his unfitness for practice was the result of a fright caused by having sat in a motor car which met with a terrible accident ending with the death of the driver, the lawyer remaining unhurt. Shortly after the accident the man appeared quite changed to his family; he seemed to them "strange," his intelligence was diminished. To the question if he felt ill, he answered that he felt quite well. He had done no work since the accident (more than two years), but did not know why he had been pensioned by the company with which he has been connected as legal adviser. The examination showed that the patient really suffered from paralytic dementia. Fibrillary twitchings were observed on both cheeks from time to time. The pupils, which were unequal, reacted neither to light nor accommodation. His syllables were indistinctly pronounced. Some questions from the multiplication table were answered correctly, but he could not reckon 12×15 . He had the greatest difficulty in subtracting 35 from 100. In writing down simple sentences from dictation he put a wrong word in one place and in another left out a syllable. When seen four months later by Walderhorn he was in a state of maniacal exaltation. He ran restlessly around his cell and expressed exalted, grandiose ideas. Dr. Walderhorn gave it as his opinion that the mental disease had first commenced after the accident. There were neither subjective nor objective evidences of previous syphilis. He gave the following official opinion: That the disease—softening of the brain—had developed gradually and unnoticeably, but it had not arisen without special cause. The sight of the accident had given the first impulse, and it might be assumed that without that the individual in question would even today be fit to work.

SCHOOL DENTISTS

At the recent conference of the Austrian Dental Association an important paper was read by one member on "School Dentistry." The arguments enumerated were directed to prove the usefulness of the dentist as a functionary of the elementary school, not only for the repair of bad teeth but for the prevention of dental disease. He spoke on the question of undernourished children and pointed out that it was but a poor policy to provide children with food unless they had teeth wherewith to chew it, and defective teeth were only too common among children of the elementary schools. He explained the aims of the School Dentists' Society to be the introduction of teaching in dental hygiene, the instruction of the teachers themselves in the same subject, and the provision of dental inspection and treatment in schools. In the discussion that followed several medical men and dentists took part, all of them speaking in favor of the proposal. Dr. Haggemacher of Budapest made the emphatic statement that there was scarcely a disease that could not be brought about through a diseased condition of the mouth, and he emphasized the importance of the school dentist as a factor in preserving the national health.

COFFEE AND NEURASTHENIA

In Austria, and particularly in the states lying east from it, namely, the Near East states, coffee drinking is a very popular habit. People drink coffee in the morning, after lunch, again at 5 o'clock and after dinner. Recently certain statements have gone the round of the public press purporting the harmful effects of coffee drinking. Conclusions are hastily drawn from isolated cases of excess, and irreparable injury to delicate nervous tissues, and so on. One is almost tired of reading these pseudo-scientific arguments, of the publication of which there is no end. It has been freely alleged that the modern malady of neurasthenia was the offspring of tea and coffee drinking. The medical papers are much more mod-

erate in their criticism and say that the complex character of the changes brought about by functional disturbances of the cerebrospinal nervous system are too well recognized to allow of any one cause being laid down as the predisposing or the exciting one. The neurasthenic may consume coffee to excess as he may any other beverage, for lack of control is always the chief underlying factor of his complaint. Every practitioner is aware of the ill effect of strong milk-coffee when given to infants, to the dyspeptic and to the neurotic student, more particularly when it is badly made. Leaflets conveying simple instructions how to make tea and coffee wisely and well might be distributed to poor hospital out-patients with advantage, for even in these days of popular science and health lectures there are thousands who still remain ignorant as to the proper management of the coffee and tea, pot.

DEMONSTRATION OF A LARGE GALL STONE PASSED PER VIAS NATURALES

'At the Cluj Medical Society, Professor Jacobovici showed a patient who has had extreme jaundice for two years, and who in January last passed a large gall stone $7\frac{1}{2}$ ctm. in length and 4 ctm. in circumference. It weighed only 46 grams. It was composed mostly of cholesterolin. It was passed without trouble, so that the patient was able to continue in service. His condition was not improved, however; on the contrary, he had to be kept in bed for months. It was suspected that another stone remained, and a few weeks later another stone, much less in size, was passed. After that great improvement was noticeable. The liver could no longer be palpated, the pain was gone, and the jaundice had become much paler. It was believed that the stone lately passed was lodged in the liver.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEK ENDING JUNE 13, 1925

| | | | |
|---|-----|----------------------------|-----|
| Chickenpox | 152 | Scarlet fever | 114 |
| Diphtheria | 68 | Septic sore throat | 1 |
| Dog-bite requiring anti-rabic treatment | 7 | Syphilis | 40 |
| Epidemic cerebrospinal meningitis | 2 | Suppurative conjunctivitis | 12 |
| German measles | 288 | Tetanus | 1 |
| Gonorrhea | 61 | Trachoma | 1 |
| Influenza | 5 | Tuberculosis, pulmonary | 125 |
| Measles | 881 | Tuberculosis, other forms | 12 |
| Mumps | 30 | Tuberculosis, hilum | 5 |
| Ophthalmia neonatorum | 28 | Typhoid fever | 8 |
| Pneumonia, lobar | 77 | Whooping cough | 107 |

NEWS ITEMS

RESIGNATION OF DR. S. H. CALDERWOOD—For thirty years Dr. Calderwood has served the State as a member of the Board of Registration in Medicine, and feeling that he should be relieved of the duties of this position, he has submitted his resignation to the Governor. He has acted as chairman of the board for several years and has shown during these thirty years a deep and abiding interest in the advancement of the standards of medical practice. He has set an example of faithful and unselfish service to all public servants.

PRACTICAL SYMPATHY—When it was found that a boy in Ridgewood, N. J., needed blood donors, more than one hundred pupils and teachers in the town volunteered to give blood for transfusion.

GIRLS HAVE CHANCE FOR BETTER HEALTH THAN BOYS—According to Dr. Leonard Hill of the National Institute of Medical Research, London, England, the thin and abbreviated attire of girls permits a larger proportion of ultra-violet rays to penetrate their bodies, thereby conducing to better health, than is the case with boys. It is quite evident that women's dress in summer is more sensible in some particulars than that adopted by men, so far as comfort is concerned. If the assertion of Dr. Hill is confirmed by analysis of the evidence, the effect of the sun's rays will have to be compared with the possible benefits derived from less clothing with correspondingly better ventilation of the skin. It is difficult to understand why men are slaves to the fashions which include high collars and more covering than women find necessary.

REDUCTION OF CONTAGIOUS DISEASES—The Public Health Service reports a drop in the number of cases of smallpox, measles and diphtheria in 35 States for the week ending May 23, as compared with the same period in 1924.

THE NEW JERSEY SUPREME COURT rules that physicians are not liable for disappointing results of treatment unless negligence is shown or the treatment guaranteed to cure. The court, after explaining that if failure to cure every case should lead to the prosecution of physicians generally doctors would retire from the practice of medicine, and after pointing out that infection can come from a variety of causes and that all a physician can do is to assist nature in throwing the poison out, said:

"It does not necessarily follow, however, that some one is responsible for this condition and must respond in damages for his suffering and reduced earning power. The skill and care that a physician is required to give his patient is that ordinarily possessed and exercised by others in the profession."

RAILROAD COMPANY JOINS HEALTH CAMPAIGN—A special meeting of all male employees on the Brunswick Division of the Atlanta, Birmingham & Atlantic Railway Company was recently held in Fitzgerald, Georgia, for the purpose of hearing a lecture on the venereal diseases. The company provided free transportation for all employees; 600 passes were issued. The auditorium, with a seating capacity of 1200, was filled; 300 persons were turned away.

This meeting was arranged by the Georgia State Board of Health, with W. H. Gillette, Regional Consultant, United States Public Health Service, delivering the illustrated lecture on "Sex Education and Venereal Diseases." In announcing the lecture, the *Fitzgerald Herald* said, "We quarantine smallpox, yet it kills relatively few and ruins no future generations. Social diseases are winked at, yet 25 per cent. of the male population fall victims, and generations far down the weave of years will fill jails, asylums and institutions for the unfit because of them."

The Federation of Women's Clubs, through its local organizations, is also furthering the work of the Federal, State, county and municipal authorities in venereal disease control. The spirit of the Federation is fully expressed in the leaflet accompanying the exhibit.

—United States Public Health Service.

THE ELECTION OF DR. W. G. EXTON TO THE PRESIDENCY OF THE AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS—With the closing of this year's session of the American Society of Clinical Pathologists the honor of selection as president-elect was conferred on Dr. William G. Exton, director of the Prudential Insurance Company's Longevity Service and Laboratory. Dr. Exton was one of the speakers before the convention, which was held in Philadelphia, dealing with the development of a new

instrument, the scopometer, devised in the Prudential urinalysis laboratories for the measurement of the turbidity or cloudiness of body fluids.

As president-elect of the society, Dr. Exton will assume office next year, succeeding Dr. Frederick E. Sondern of New York, former president of the New York College of Post-Graduate Medicine.

Dr. Exton graduated from the College of Physicians and Surgeons, Columbia University, in 1896 and subsequently took post-graduate courses in Europe. He has been connected with the Prudential since 1914. Prior to that he was in private practice in New York City, specializing in urology. As head of the Prudential laboratory and longevity service he developed its technic for accuracy and rapidity of urinalysis.

SALE OF THE NEW YORK ACADEMY OF MEDICINE BUILDING—The Supreme Court, by Justice Levy, has signed an order permitting the Academy of Medicine to sell its property at 17 to 21 West Forty-third Street. The buyer will pay \$745,000 for the property.

This building has been occupied by the Academy for 35 years. A new site at the corner of One Hundred and Third Street and Fifth Avenue has been secured for a new building. The new building will house the library of the Academy, which is probably the second in size in the United States. In addition to other facilities a large auditorium will be provided.

The assets of the Academy amount to \$3,060,799, with a liability of \$100,000.

PEDIATRICS COURSE OFFERED BY HARVARD MEDICAL SCHOOL—The course in pediatrics offered by the Harvard Medical School for graduates includes a series of Thursday lectures at the Boston Dispensary. These lectures consist of exercises in case teaching, work in X-ray diagnosis, food demonstrations and consideration of the diagnosis of neurological, surgical and orthopedic conditions in their relation to pediatrics.

The two months' course covering July and August is adapted to graduates who wish a comprehensive course but who can give only half a day to study.—Boston Herald.

ASKS AID FOR BIRTH CONTROL—PASTOR URGES SWEDENBORGIAN CHURCH APPROVAL—Cincinnati, June 17 (A. P.) Unqualified approval of birth control and a challenge to the Swedenborgian church to "take its stand" for the support of the practice, was voiced in a paper read before the National Council of Ministers of the denomination here today.

The paper, presented by the Rev. Paul Dresser, Bath, Me., caused a sensation among the 50 ministers who form the council, which is the national executive body of the church.—N. Y. Times.

REPORTS AND NOTICES OF MEETINGS*

THE FEDERATION OF THE NEW ENGLAND EXAMINING BOARD

The meeting of the Federation of the New England Examining and Licensing Boards met at Hotel Narragansett, Providence, Rhode Island, on June 16th, 1925.

The meeting was called to order at 2.30 P. M. by Dr. Richards, President. The records of the last meeting were read and accepted.

President Richards appointed Dr. Prior of

*Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

Massachusetts and Dr. Fulton of Rhode Island, the committee on nomination. They reported the following names:

Dr. B. U. Richards of Rhode Island, for President.

Dr. John M. Birnie of Springfield, for Vice-President.

Dr. Samuel H. Calderwood of Boston, for Secretary. Dr. Calderwood declined the nomination, and

Dr. George A. Ferguson of Portland, Maine, was nominated, and they were elected.

A vote of thanks to Dr. Calderwood for his long period of service as Secretary by the Federation was passed.

Dr. William C. Woodward of Chicago gave a talk on the Ideal Medical Practice Act which was discussed by the various members of the Board.

Dr. Osborn, Commissioner of Health of Connecticut, gave a short talk on the Affairs of Medicine in Connecticut.

The President extended the thanks of the Association to Dr. Woodward for his able and interesting talk.

The members present were—

Dr. B. U. Richards, Rhode Island.

Dr. Burton W. Storrs of Rhode Island.

Dr. Frank Fulton of Rhode Island.

Mr. A. B. Briggs of Rhode Island.

Mr. Edward Harpin of Rhode Island.

Dr. Samuel H. Calderwood of Massachusetts.

Dr. Francis X. Corr of Massachusetts.

Dr. Charles E. Prior of Massachusetts.

Dr. Franklin A. Ferguson of Portland, Maine.

Dr. Osborn, Commissioner of Health of Connecticut.

The meeting adjourned at 4 P. M., after which dinner was served by the Rhode Island Board.

CLINIC AT THE BEVERLY HOSPITAL

A DEMONSTRATION clinic was held at the Beverly Hospital, Tuesday, June 16th, at 4:00 P. M. The following interesting cases were shown and discussed:

Papilloma of bladder.

Duodenal ulcer.

Cholecystitis, chronic. Cholelithiasis.

Cholecystitis, chronic. (two cases).

Fracture, compound, of left patella.

Fracture, compound, left tibia and fibula.

Arthritis Deformans.

Paralysis, musculo-spiral (following fracture of right humerus, 4 months ago).

Doctors were present from the surrounding cities and towns.

FRANCIS P. WEST, Supt.

SOCIETY MEETINGS

NEW ENGLAND STATE MEDICAL SOCIETIES

The annual meetings of the New England State Medical Societies are scheduled as follows:
Vermont State Medical Society—St. Johnsbury, Oct. 15-16, 1925.

BOOK REVIEWS

Medical and Surgical Report of The Roosevelt Hospital, New York. Second Series, 1925. Based on the Work of the Years 1915-1924 inclusive. Paul B. Hoeber, Inc., Publishers, New York City.

The preface of this volume states that the intention of the staff was to publish a new volume every five years. This plan was prevented from being carried out by the World War, and ten years have now elapsed since the first publication.

The present report contains, as did the first, articles written by members of the hospital visiting staff expressly for this purpose. The volume contains in addition reprints of papers published in recent years in magazines and periodicals by members of the staff.

This is a volume of 378 pages, including an index of subjects and an index of authors, but no bibliography. There are 47 illustrations. It consists of short papers on a considerable variety of subjects. These include:

Fractures of the Elbow.

Technic of Partial Colectomy by the Mikulicz Two-Stage Method.

The Advantages of the Mikulicz Two-Stage Operation of Partial Colectomy.

The Relationship Between Certain Forms of Intestinal Obstruction, Chronic Peritonitis, and Chronic Multiple Serositis.

The Surgical Treatment of Megacolon.

Traumatic Osteomyelitis.

Non-Protein Nitrogen and Blood Pressure in Relation to Kidney and Heart Lesions.

Two Classifications of Bright's Disease.

The Diagnosis and Treatment of Pyelitis in Infancy and Childhood.

Recovery after Postoperative Tetany Treated with Calcium Lactate.

Hypertension and Hyperglycemia.

Carcinoma of the Colon.

Chronic Duodenal and Gastric Ulcer.

Tumors of the Breast.

Extrauterine Pregnancy.

Tuberculous Dactylitis.

Cancer of the Large Intestine.

End Results of 201 Cases of Carcinoma of the Cervix.

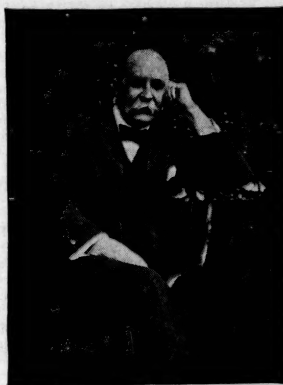
Breast Tumors.

This volume follows the usual type and routine of such hospital reports.

The Life of Sir William Osler. By HARVEY CUSHING. 2 Vols. 1413 pp. The Clarendon Press. Oxford, England. 1925.

Every medical man, be he student, practitioner or educator, should read this life of a

really great physician of modern times, the apostle of higher medical education, as told to the profession by a devoted friend, with unusual literary skill and in a manner which holds the reader's interest to the last word. Dr. Cushing, formerly associate professor of surgery at the Johns Hopkins, now Moseley professor of the same subject in Harvard Medical School, was selected as the biographer of Sir William by Lady Osler, soon after his death at the end of the year 1919. From such letters as could be recovered, from Osler's writings and from his pocket commonplace book the biographer has woven a very human account of a man who, besides being the leading medical



SIR WILLIAM OSLER

man of three countries, had a genius for friendship. Of Osler's seventy years of life thirty-five were passed in Canada, where he was born and reared; twenty in the United States, and fifteen in England. The author tells the story of his life day by day; he also sketches understandingly the progress of medicine in the three countries during that period, thus adding materially to the medical value of the book.

Although most members of the medical profession are familiar with Osler's later activities, knowing him as a bookish man who had, as he said, an "ink-pot career," a maker of appealing addresses, a promoter of medical societies, a traveller, who took a "brain dusting" journey every five years, who attended the chief medical meetings of the world and was the author of the "Principles and Practice of Medicine," the leading text-book of the profession for over thirty years, comparatively few are cognisant of his origin and early life. Therefore they will read with interest that Osler was born, July 12, 1849, in a small town in the wilderness of Upper Canada at the westerly end of Lake Ontario—the author very

properly has introduced a map to show the exact region. The future great physician was the son of a poor clergyman who had come out from Cornwall with his young wife to care for the souls of the settlers. William, the youngest son of a family of nine, "with twins ahead," as he said in one of his addresses many years later, had few advantages in the beginning of his education. At boarding school he came under the influence of William Arthur Johnson, a clergyman of the Church of England with strong ritualistic leanings, and young Osler was destined for the church. Johnson introduced him to Sir Thomas Browne's *Religio Medici*, which became his favorite book through life and was placed on the coffin at his funeral. Johnson was a naturalist as well as preacher and excited his pupil's interest in zoölogy; he brought him into contact with James Bovell, professor of the institutes of medicine in the short lived Trinity Medical College at Toronto, who was to mould the young man's character along scientific lines. Osler assiduously collected diatoms and fresh-water polyzoa wherever he could find them; he was school prefect, an all round athlete, jovial and a player of practical jokes. Later in life no one objected to his fun; at this time some of the teachers did. He went on to Trinity College and then to the Toronto Medical School. There he met R. Palmer Howard, the third of his principal teachers, and transferring to McGill at Montreal, took his M. D. in the year 1872. Two years' study of medicine in England and on the Continent, made possible by an elder brother's generosity, put Osler into touch with the latest teachings. General medicine nearly lost its future brilliant star when he prepared himself in ophthalmology hoping to begin practice in that new specialty in Montreal. Francis Buller, five years his senior, forestalled him. Subsequently they were life-long friends. Osler worked in the laboratory of Sir John Burdon Sanderson, then occupying the chair of Regius Professor of Medicine at Oxford, a position Osler was to fill in time. He discovered the blood platelets in the circulating blood. On his return to Montreal in 1874 he was appointed lecturer on the "Institutes of Medicine" at McGill, and in a year, at the age of twenty-five, was full professor; soon he became physician to the Montreal General Hospital. How he prospered as professor, beloved by his students, how he immersed himself in pathology, haunting the autopsy room and making careful records, obtained microscopes for the students, made addresses on medicine and books whenever opportunity offered, became a friend to everyone with whom he came in contact and changed dry didactic teaching to personal bedside clinics the author has well described.

At the age of thirty-four Osler was called to the professorship of clinical medicine at the University of Pennsylvania, Philadelphia.

There he introduced bedside teaching, founded on pathology and set free the "Osler ferment" until called, in 1889, to organize the department of medicine in the new Johns Hopkins University at Baltimore. His valedictory address in Philadelphia was the famous "Aequanimitas." At the Hopkins he developed further the teaching of medicine on the actual patient; his mistakes in diagnosis often interested him more than his successes; he used them to instruct the students, but he never forgot the patient in his interest in the disease. The clinical clerks said: "If you want to see the Chief at his best watch him when he passes the bedside of some poor old soul with a chronic and hopeless malady—they always get his best." Cushing was associated with Osler at the Hopkins, was his near neighbor and grew to love him and to have a deep reverence and devotion which was augmented until it found expression in the making of this biography.

Osler was called to the chair of Regius Professor of Medicine at Oxford in 1904. Before leaving he delivered the Ingersoll Lectures at Harvard on the "Immortality of Man," and received Harvard's LL.D. At Oxford he carried on the medical reforms, both in teaching at the Radcliffe Infirmary and elsewhere and in public health matters, that had occupied him across the Atlantic. He helped to bring about the amalgamation of twenty or more London medical societies into the Royal Society of Medicine; he organized a tuberculosis association; he set the Oxford Press to the printing of medical books; he assisted the further development of the Bodleian Library, and he gathered the Bibliotheca Osleriana and catalogued it. Every three years he brought out a revised edition of his text-book, the first printing of which was in 1892. At the Coronation of King George, in 1911, he received a baronetcy. In spite of his many duties he found time to keep in touch with his former associates and friends all over the world by visits and an active correspondence. On his last visit to America, in 1913, he delivered the Silliman Lectures at Yale on the "Evolution of Modern Medicine."

Osler was married in Baltimore at the age of forty-two to the widow of Dr. S. W. Gross. Their only surviving child, Edward Revere Osler, his father's constant companion, fond of books, a student at Oxford, was killed in France by shell wounds while serving as lieutenant in the Royal Field Artillery, on August 30, 1917. The father was heartbroken but notwithstanding kept on with his work, aided all Canadians and Americans in his hospitable home "Open Arms," made addresses, collected books, fulfilled his duties until his long time enemies, influenza and pneumonia, finally caused his death by empyema and pulmonary abscess on December 29, 1919, five months after his seventieth birthday. His closing hours are most touchingly and sympathetically treated by

Dr. Cushing, who throughout has told the story in a clear and masterly style.

Excellent features of bookmaking are the running headings of the pages, giving, besides the chief topic considered, the year and Osler's age; a summary of each chapter in the table of contents and a remarkably full index. Forty-four illustrations, mostly half-tones, judiciously selected, add to the value as do the frequent footnotes, piecing out, as they do, the story and adding to an accurate record of a notable life. There is no appendix.

Having in mind Dr Cushing's addresses in recent time, notably that at the Ether Day celebration at the Massachusetts General Hospital in 1921, "The Personality of a Hospital," in which he sketched so happily his associates in days gone by, the presidential address before the American College of Surgeons at Boston in the following year and the "Western Reserve and its Medical Traditions," delivered at the dedication of the new medical building at Cleveland, in October, 1924, we are not surprised to find this *magnum opus*, the result of five years' painstaking labor, a literary production of a high order of merit. We must congratulate Dr. Cushing for having given us a vivid and living picture of a many-sided personality. This is not, as are so many of our modern biographies, a brilliant criticism of a more or less mythical hero published long after; he has enabled us to see through his eyes the daily life of a great man, to understand why Osler was regarded as a seer, endowed with a supreme gift of wisdom; why he was listened to with respect by all and was the beloved companion of old and young; all with an entire self-effacement, rarely found. The book will go down in the annals of the future as one of the great biographies.

WALTER L. BURRAGE.

Surgery. A Comprehensive Presentation of General and Special Surgery. Edited by Professor Dr. M. Kirschner, Königsburg and Professor Dr. O. Nordmann, Berlin. Berlin and Vienna: Urban and Schwarzenberg, 1925.

This new German system of surgery aims to present the latest knowledge of the subject with special reference to operative technic. The first instalment (Vol. I.) contains an historical introduction by von Brunn of Rostock; chapters on surgical anesthesia by Pels-Lensden of Greifswald, on sepsis and antiseptics by Boit of Kowno, on X-ray and radium by Kurtzahn of Königsburg, and on constitutional diseases by Bauer of Göttingen. The second instalment (Vol. iii) consists of the sections on surgical diseases of the lymph-nodes by Neupert of Charlottenburg; on surgery of the breast by Klose of Dantzig and Sebening of Frankfurt; on surgery of the thyroid, parathyroids, thymus, and adrenals by Sudeck of Hamburg; and on sur-

gery of the hypophysis by Oehlecker of Hamburg.

The work is copiously illustrated, has an abundant modern bibliography, and promises well as a compendium of surgery. It contains frequent references to American methods and technic.

Infections of the Hand. ALLEN B. KANAVAL, M.D. 5th Edition, thoroughly revised. Lea & Febiger, Philadelphia and New York, 1925. 499 pp. 196 illus. \$5.50.

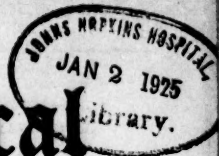
This volume which has become one of the classics of surgical literature needs no introduction. Every surgeon or practitioner dealing with the most minor infections of the hand should be familiar with the principles of diagnosis and treatment so clearly set forth by the author. In dealing with the question of hand infections, the student and the surgeon alike must recognize that he is dealing with a great economic problem and that much depends on his ability to cope with it properly. From the viewpoint of the infected individual, his future earning capacity is often at stake and this can be materially affected if poor functional results are obtained. The treatment of hand infections as a serious surgical condition from the time of their inception is urged.

In this edition greater emphasis has been placed upon the restoration of function, and various procedures, illustrated with pictures of splints designed to aid in attaining this end, have been introduced.

Operative Surgery. J. SHELTON HORSLEY, M.D., F.A.C.S. 2nd Edition. 1924. The C. V. Mosby Company, St. Louis. 784 pp. 666 illus. \$12.50.

There has been no attempt to make this volume an encyclopedia of operations such as is found in the larger text-books and systems of surgery. It is more nearly a series of carefully prepared essays embracing the important subjects of surgery, and the biological principles upon which the proposed operative attack must be based. A new chapter on the principles of operations for malignant growths has been added. The volume has been brought abreast of the current surgical literature by the addition of such procedures as Costain's lymphaticostomy, Graham's cautery lobectomy, Cutler's mitral valvotomy, and the operation of Coffey and Brown for angina pectoris. It is to be hoped that further experience with these procedures will justify their inclusion in such a standard work.

The book is written in an attractive manner, and all operative procedures described are illustrated by well chosen and numerous illustrations. The section on the surgery of the vascular system is particularly noteworthy.



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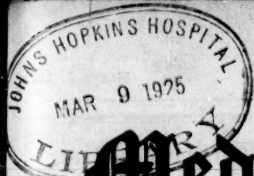
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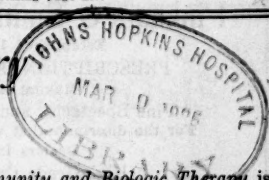
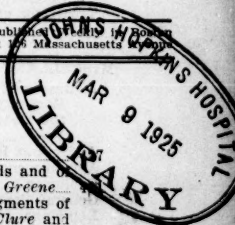
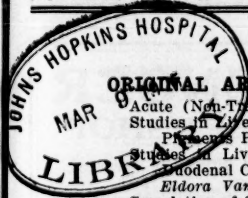
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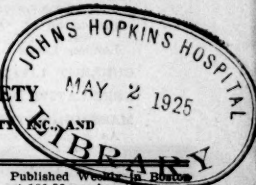
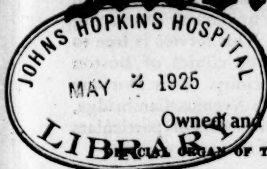
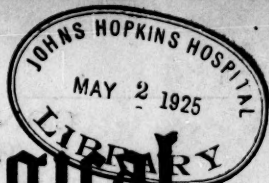
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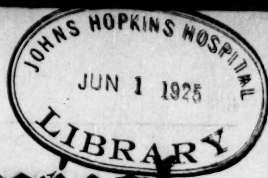
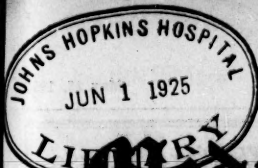
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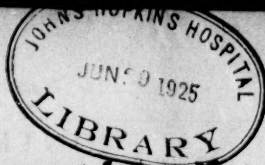
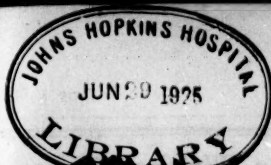
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THE NEXT ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY WILL BE HELD IN BOSTON ON JUNE 8 AND 9, 1926,

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For lists of Officers of the Society and of the District Medical Societies, see advertising page II.

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